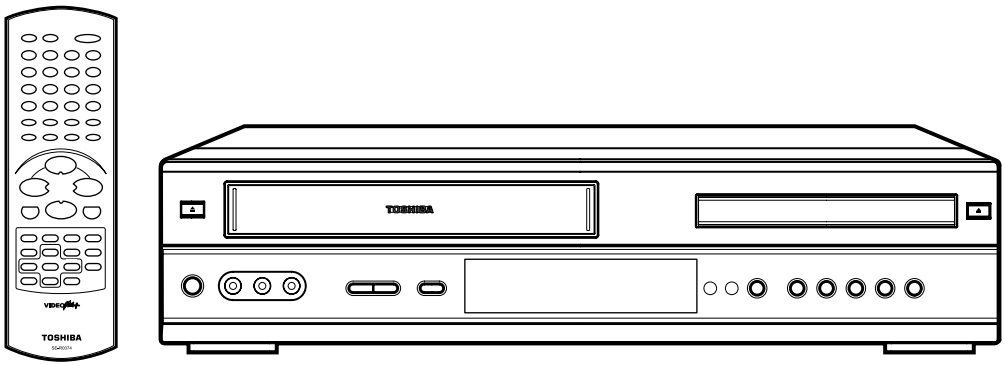
TOSHIBA

DVD PLAYER
Hi-Fi VIDEO CASSETTE RECORDER

SD-22VB
USER'S GUIDE

VHS PAL SQPB
4 HEAD
Hi-Fi

DVD VIDEO™ COMPACT disc DIGITAL VIDEO COMPACT disc DIGITAL AUDIO VIDEO Plus+®



DOLBY DIGITAL dts DIGITAL OUT SPATIALIZER® VIRTUAL SURROUND MP3

Safety Precautions

SAFETY FIRST

The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT

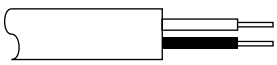
- Please read the various precautions on page 2 and 3 before installing or operating the recorder.
- It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

CAUTION

- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the mains outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the mains outlet prior to connecting or disconnecting any signal lead or aerial.

IMPORTANT

Connection to the mains supply in the United Kingdom. DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain a proper safety approved extension lead/adapter or consult your dealer.
In the unlikely event of the plug fuse failing be sure to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover. If the fuse fails again consult your nearest JVC dealer.
If nonetheless the mains plug is cut off remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.
If this product is not supplied fitted with a mains plug then follow the instructions given below:
DO NOT make any connection to the Larger Terminal coded E or Green.
The wires in the mains lead are coloured in accordance with the following code:



Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt – consult a competent electrician.

The STANDBY/ON ⏻/I button does not completely shut off mains power from the unit, but switches operating current on and off. "⏻" shows electrical power standby and " I " shows ON.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

MOISTURE CONDENSATION

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions-just as water droplets form in the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder turned on for a few hours to let the moisture dry.

When the equipment is installed in a cabinet or a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear.)

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

Failure to heed the following precautions may result in damage to the recorder, remote control or video cassette.

1. DO NOT place the recorder ...
... in an environment prone to extreme temperatures or humidity.
... in direct sunlight.
... in a dusty environment.
... in an environment where strong magnetic fields are generated.
... on a surface that is unstable or subject to vibration.
2. DO NOT block the recorder's ventilation openings or holes.
(If the ventilation openings or holes are blocked by a newspaper or cloth, etc., the heat may not be able to get out.)
3. DO NOT place heavy objects on the recorder or remote control.
4. DO NOT place anything which might spill on top of the recorder or remote control.
(If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)
5. DO NOT expose the apparatus to dripping or splashing.
6. DO NOT use this equipment in a bathroom or places with water. Also DO NOT place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups, etc.) on top of this unit.
7. DO NOT place any naked flame sources, such as lighted candles, on the apparatus.
8. AVOID violent shocks to the recorder during transport.

Some Do's And Don'ts On The Safe Use Of Equipment

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operating instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way – switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and NEVER fix legs with wood screws – to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL...

– **NEVER** let anyone especially children push anything into holes, slots or any other opening in the case – this could result in a fatal electrical shock;
– **NEVER** guess or take chances with electrical equipment of any kind – it is better to be safe than sorry!

Features

Video Cassette Recorder

- High Quality (HQ) Images
- On-Screen Displays (OSD)
- Nicam Hi-Fi Stereo Audio Recording and Playback
- Auto TV Station Tuning and Auto Clock Set
- 80 Memory for presets
- Auto Time Setting
- 30 Minute Back-Up in case of Power failure
- 6 rotary Head (4 Video Head and 2 Hi-Fi Audio Head)
- Long play
- Programme Delivery Control System
- Timer Recording of up to 8 Programme per Month
- VIDEO Plus+® rapid timer programming
- One-touch Timer Recording (OTR)
- Video index Search System
- Slow Motion
- NTSC Video Cassette Tape Playback on PAL TV
- Real-Time Tape Counter with ZERO RETURN-Function
- Digital AUTO Tracking (ATR Function)
- Repeat/Playback
- On-Screen Display in 3 Language
- AV-Front input jack
- Audio Mixing

DVD Player

- Digital Audio Jack (Coaxial)
- Multi-Language
- Multi-Angle
- Surround audio
- Repeat Playback
- Memory/Random Playback
- Zoom
- Video Aspect Ratio
- Parental Control
- 3 Scene memory
- Digital (Optical or Coaxial) output for Dolby Digital (AC-3) and DTS
- Playback of DVD, Video-CD and Audio-CD
- PAL & NTSC DVDs playback
- A-B Repeat playback
- MP3 CD playback

VHS PAL SQPB HQ VIDEO Plus+®

- Cassettes marked "VHS" (or "S-VHS") can be used with this video cassette recorder. However, S-VHS recording is not possible with this model.
- This model is equipped with SQPB (S-VHS QUASI PLAYBACK) that makes it possible to play back S-VHS recordings with regular VHS resolution.
- HQ VHS is compatible with existing VHS equipment.
- VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

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* This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation or other rights owners and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation or other rights owners. Reverse engineering or disassembly is prohibited.

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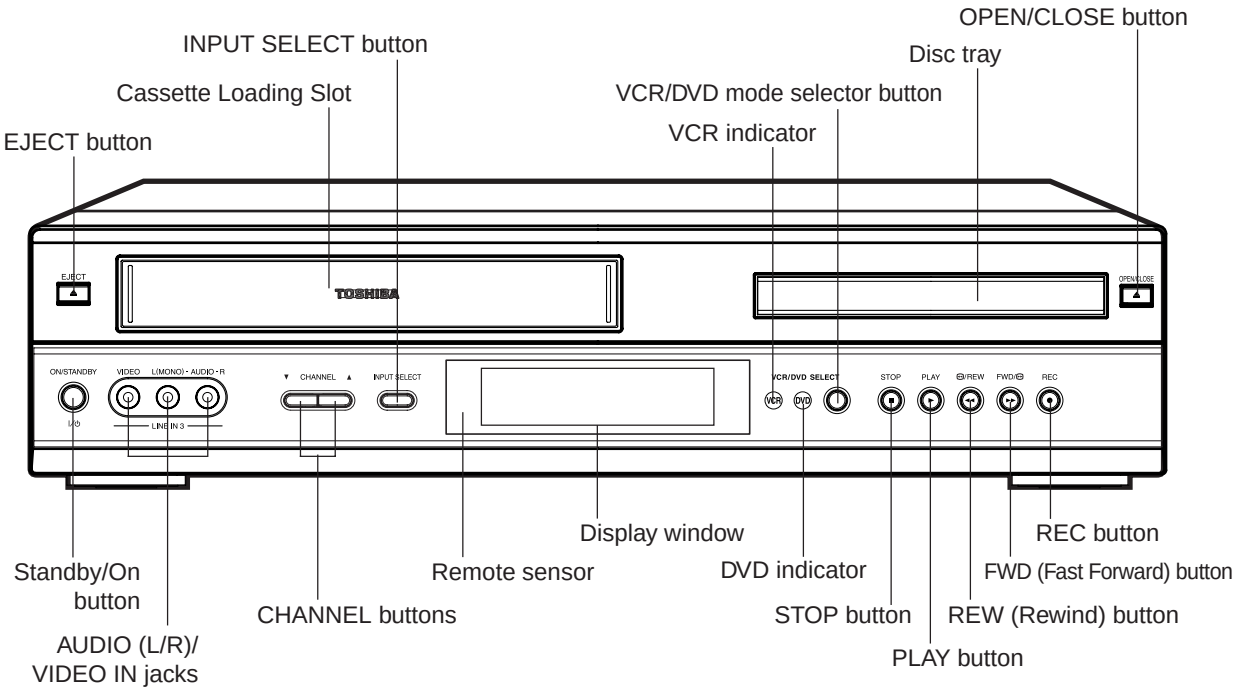
* “DTS” and “DTS Digital Out” are trademarks of Digital Theater Systems, Inc.

* Certain audio features of this product manufactured under license from Desper Products,Inc. Spatializer and the circle - in - square device are trademarks owned by Desper Products,Inc.

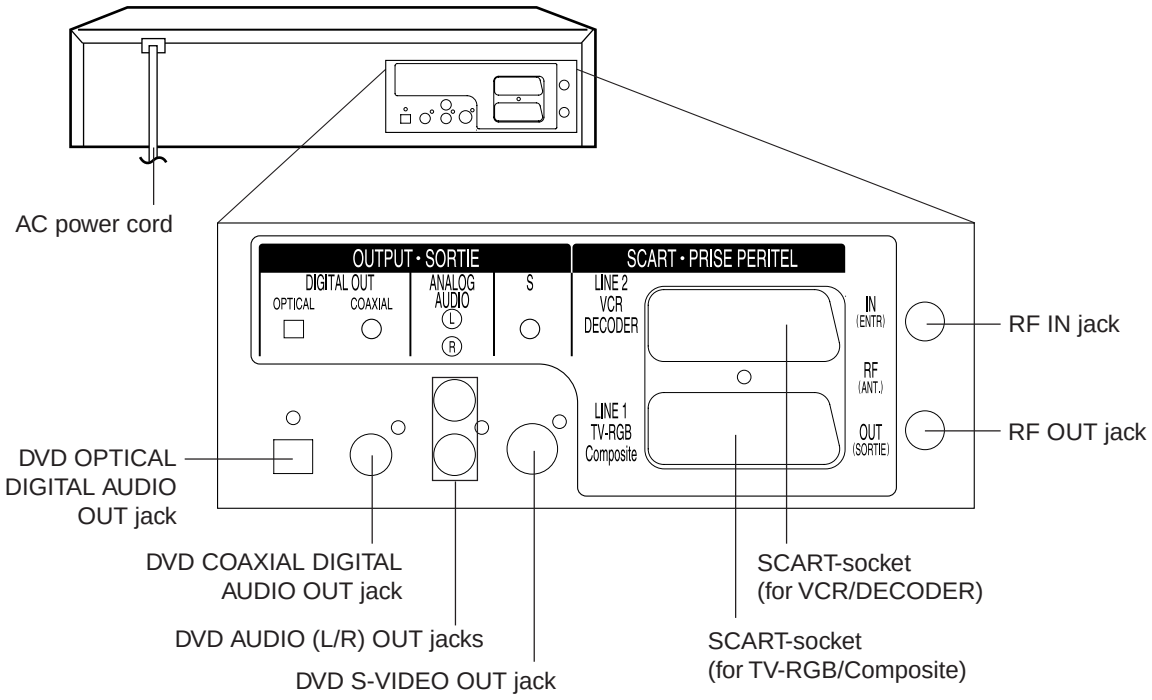
* Unauthorized recording of copyrighted television programs, films, video cassettes and other materials may infringe the rights of copyright owners and be contrary to copyright laws.

Parts and functions

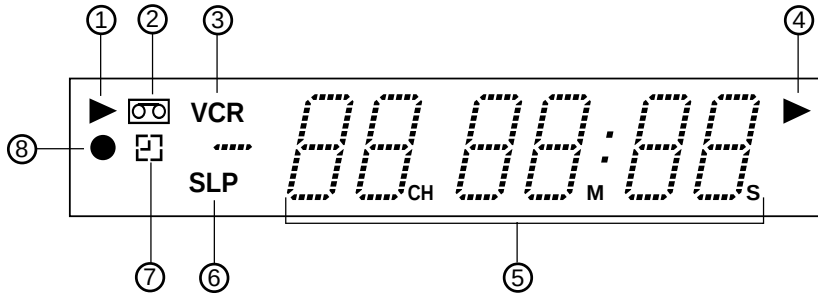
Front



Rear



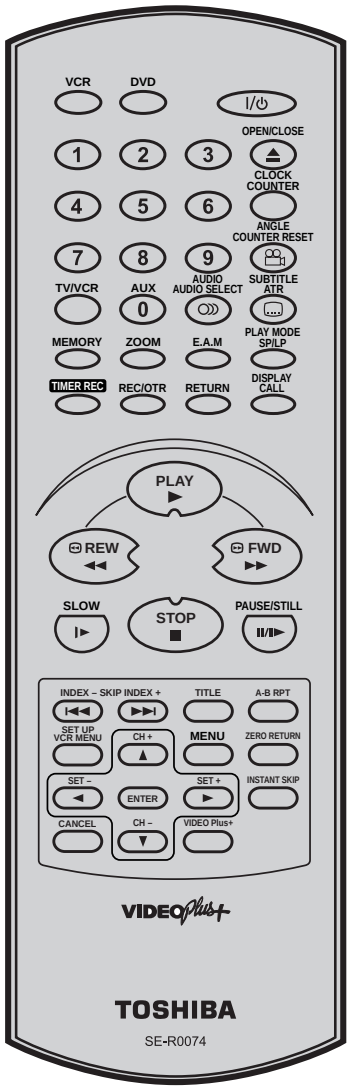
Display window



No.	Display	Description
①	▶	Play indicator (VCR)
②	📼	Video tape is in the unit
③	VCR	VCR mode of TV/VCR switch
④	▶	Play indicator (DVD)
⑤	10 : 00	Clock display (colon[:] flashes)
	01H 00M 00S	Counter display by hour/minute/second
	tr 2	Track number display for CD
	2 CH	TV channel position display
	L1/L2/L3	External input display
⑥	SP	Tape speed indicator (VCR)
⑦	⏲	Timer recording display
⑧	●	Normal recording display (flashes during Recording PAUSE mode)

Note:
Some discs may be displayed wrong or e.g. chapter number, playback time, etc. may not be displayed.

Remote control



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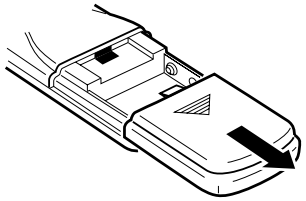
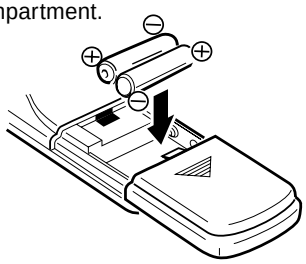
How to install the batteries

Use **micro batteries type AAA**.

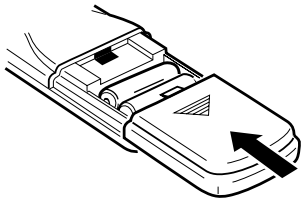
1 Slide the battery compartment cover in the direction of the arrow.



2 Install two "AAA" batteries (supplied), paying attention to the polarity diagram in the battery compartment.



3 Replace the compartment cover.

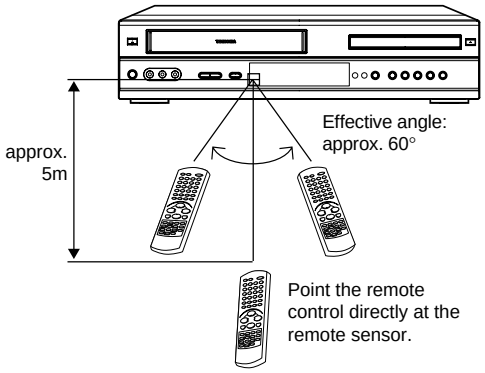


Battery precautions

The precautions below should be followed when using batteries in this device:

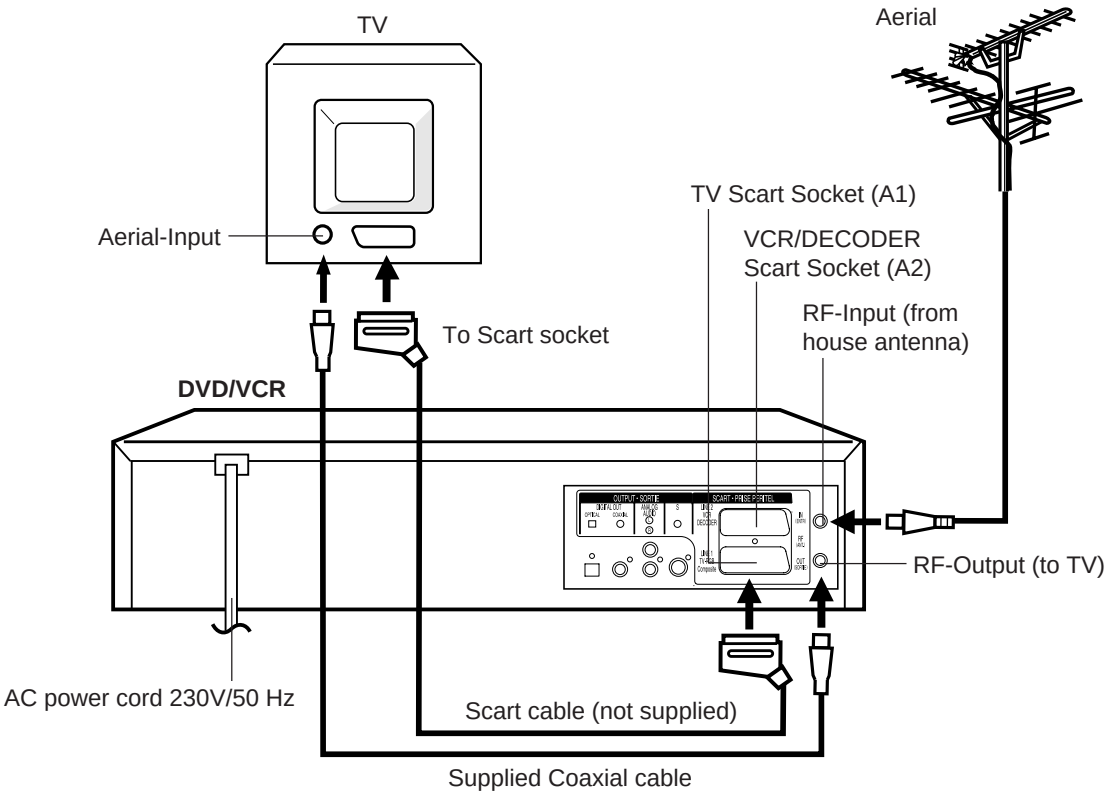
1. Use only the size and type of batteries specified.
2. Be sure to follow the correct polarity when installing the batteries as indicated in the battery compartment. Reversed batteries may cause damage to the device. To avoid a potential short circuit, insert the "–" end first.
3. Do not mix different types of batteries together (e.g. Alkaline and Carbon-zinc) or old batteries with fresh ones.
4. If the device is not to be used for a long period of time, remove the batteries to prevent damage or injury from possible battery leakage.
5. Do not try to recharge batteries not intended to be recharged; they can overheat and rupture.

Distance of Remote Control Operation



Connections and Installation

Connect your DVD/VCR to your home's aerial and to your TV-set as shown in the illustration.
When you have finished these connections you connect your DVD/VCR to the 230-240 V / 50 Hz mains.



Connect a TV with the Scart socket

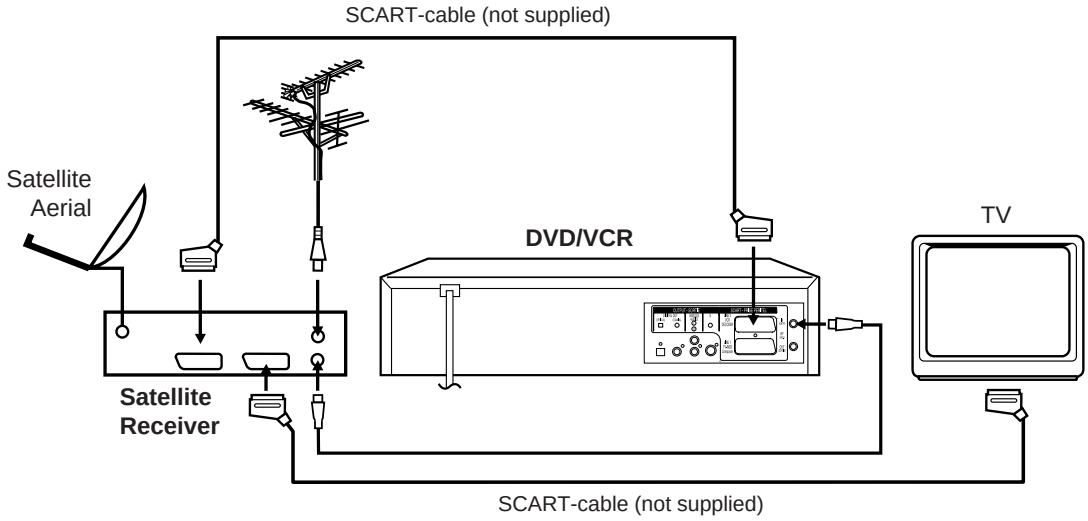
In addition to the coaxial cable connection, connect also with scart cable. The picture and sound will be transmitted best through the scart cable. In this case, the TV need not be tuned to the video recorder. The Video channel also need not be tuned. The video recorder switch the television to video operation through the scart cable automatically.
The stereo-playback is possible in only case through a scart cable!

If your TV-set does not switch to video-playback operation automatically, please turn your TV's video switch to VIDEO position manually.

The exact arrangement you use to interconnect various video and audio components to the DVD/VCR is dependent on the model and features of each component. Check the Owner's Manual provided with each component for the location of SCART socket.

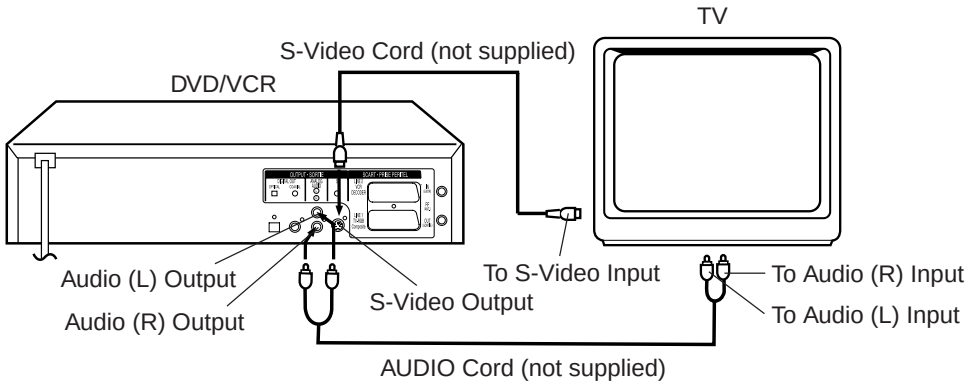
Connection to a Satellite Receiver

If a Satellite Receiver is used, we recommend the following configuration:



To record from Satellite Receiver press "**AUX**" on the remote control of DVD/VCR twice. "A2" will appear on the front display. Select the desired TV-program at Satellite Receiver.

Connect to a TV with S-Video Output



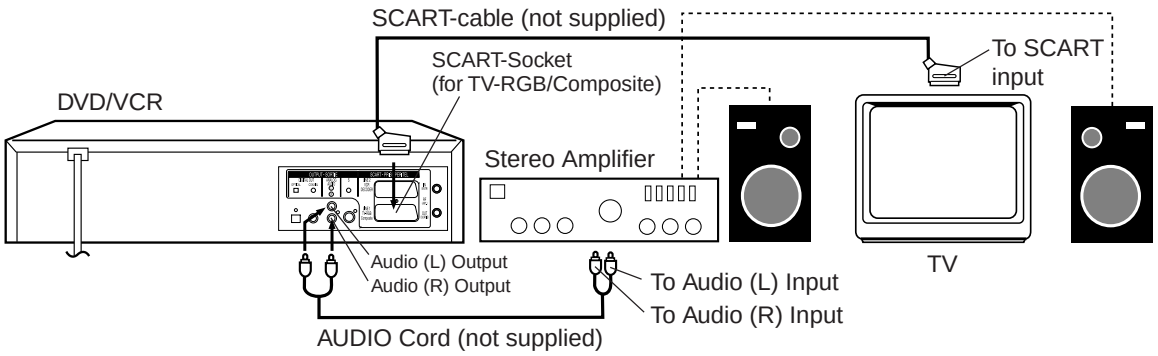
Note:

- The S-VIDEO jack is useful only for DVD section.
- If you use the connection with S-Video Cord, set the “Video Out Select” (P.40) to “Video”.

Playback connection

Connect to a Stereo Amplifier with Audio Output

If your DVD/VCR is connected to a stereo amplifier, the video soundtrack can output through the loudspeakers of the stereo system.

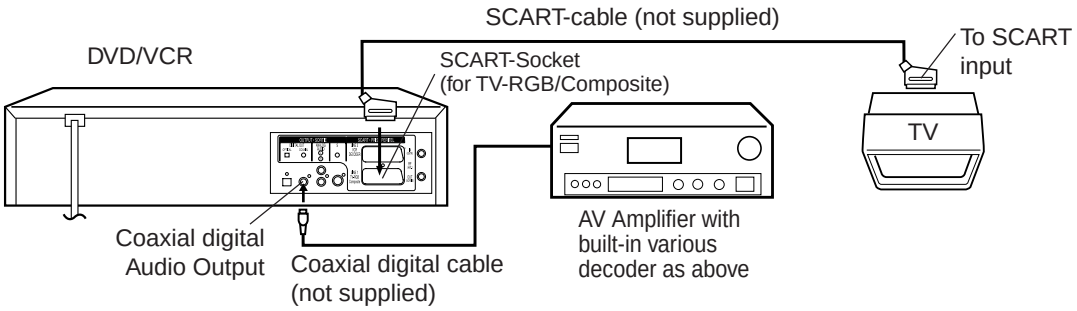


Connect to an AV Amplifier with built-in digital surround

If you are using an Amplifier with a built-in digital surround as follows, you can enjoy the various audio systems such as Dolby Digital and DTS by using the Coaxial Digital Output.

Use this connection to connect an:

- **AV amplifier with built-in *Dolby Digital decoder**
- **AV amplifier with built-in *DTS decoder**



Connecting the optical digital cable

You may connect to an AV Amplifier with an Optical digital cable (not supplied) instead of a Coaxial digital cable.

When you connect the optical digital cable (not supplied), remove the dust protection cap from the rear panel. When not using the optical digital cable, attach the dust protection cap to protect against dust.

NOTES:

- The OPTICAL, COAXIAL jacks are useful only for DVD section.
  VHS signal is output only from the SCART-sockets, AUDIO L/R jacks and RF OUT jack.
- When you make the connections above, do not set DOLBY DIGITAL to DOLBY DIGITAL or DTS to ON on the AV Amplifier. If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.
- DTS audio will be output only from the COAXIAL output. To hear DTS audio, DTS-Decoder is necessary.
  When playing DTS-encoded CDs, only noise will be heard from the speakers or analogue stereo outputs.
- Some DTS decoders which do not support DVD-DTS interface may not work properly with the unit.

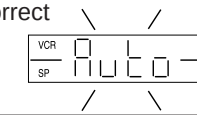
Tuning the TV Stations and Setting the Time and Date Automatically

Plug your DVD/VCR into the mains supply and it will start to automatically tune itself in and set the correct date and time. After setting itself up, you must set the TV to the video channel.

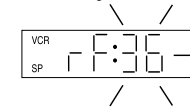
Preparation

- Make sure that your DVD/VCR is connected properly to the TV.
- If a satellite receiver is connected with the coaxial lead, make sure it's switched ON and set to SKY ONE.
- Turn on the TV and select the channel you wish to allocate for video use.

1 Plug your DVD/VCR's plug into the mains supply. "Auto" will start to flash in the display. Your DVD/VCR will automatically tune itself in and set the correct time and date (This may take approx. 4 minutes).

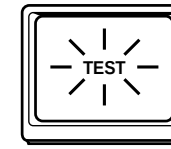


2 Press and hold the ⏻ button on the front of your DVD/VCR in the Standby mode until "rF" and RF output channel "36" will appear in the display.



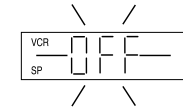
3 If you have used a 21PIN scart lead you now, simply select the AV channel on your TV and go to step 5. Tune the TV in the same way as tuning in a TV broadcast station until the word "TEST" flashes on the TV screen. Refer to the TV operating instructions for tuning.

Now the output from the DVD/VCR is tuned to this channel. Whenever you want to play back a tape, select this channel.



4 If there is interference in the picture (wavy lines, picture roll, etc.), press **CHANNEL** on your DVD/VCR to select any RF channel between 23 and 69, retuning your TV until the word "TEST" flashes on the TV screen.

If you connected a satellite receiver as explained on page 11, you must switch off the DVD/VCR's transmitter. Press the VCR's **CHANNEL** repeatedly until OFF appears in the display window (OFF will appear after 69 or before 23).



5 Press the ⏻ button to turn OFF the DVD/VCR. Now the TV is tuned to your DVD/VCR.

Notes:

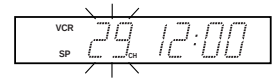
- The DVD/VCR automatically corrects the clock setting every hour and automatically adjusts the clock setting for Daylight Saving Time.
- Your DVD/VCR will tune the TV stations as follows.

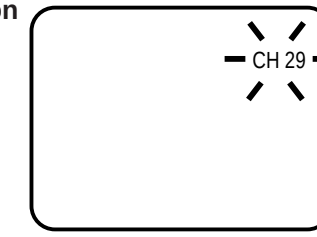
CH 1	BBC 1
CH 2	BBC 2
CH 3	ITV
CH 4	Channel 4
CH 5	Channel 5
CH 6	Satellite
CH 7	etc.

  For VIDEO Plus+ recording to work correctly, this order should not be changed.
- If you want to change the RF output channel or switch to "OFF", press and hold the DVD/VCR ⏻ on the front of your DVD/VCR in the Standby mode until the current RF output channel appears. Press **CHANNEL** on your DVD/VCR to select the RF channel you desire.
- Skipped channels still may be selected directly through the **1 to 0 keys**.
- To cancel skipping select the skipped channel using the **1 to 0 keys**, then press **CANCEL**. The channel No. does not blink any longer, and the channel No. now may be selected again using **CHANNEL**.

To skip a channel position

Unwanted channels can be skipped so that they cannot be called up by pressing **CHANNEL**. Select the channel to be skipped,



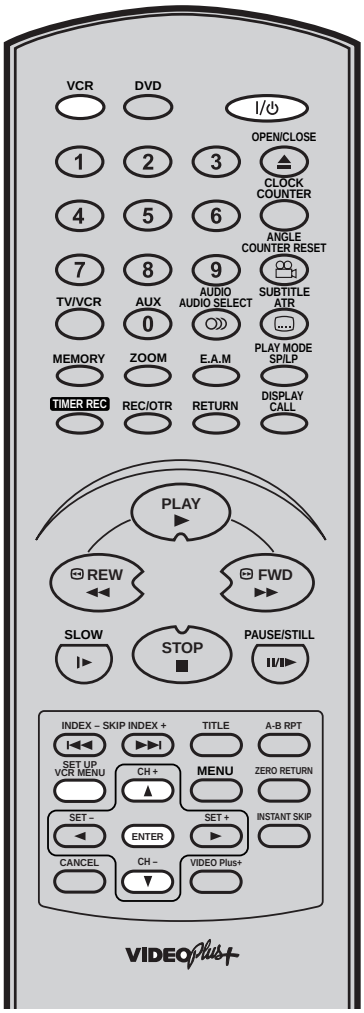


...e.g. channel 29. Select channel 29, then press **CANCEL**.

This channel's number will be flashing. That way you can cancel further channels one after the other.

On-screen Language Selection

Turn on your TV and select the VCR channel which you have already tuned on your TV. The TV will switch to AV (VCR mode) automatically by the Scart lead connection. The on-screen menu can display any of three languages; English, German and French.



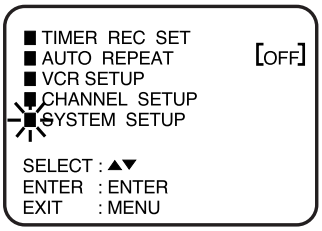
Notes:

- **If the unit does not operate properly, or No key operation (by the unit and / or the remote control):** Static electricity, etc., may affect the player's operation. Disconnect the AC power cord once, then connect it again.
- If you use the unit for the first time and press **VCR MENU**, instead of the MENU screen in steps **1** and **2**, the one in step **3** may appear. This is normal for this DVD/VCR and is no indication of a malfunction.
  Please first select the language to operate this unit.

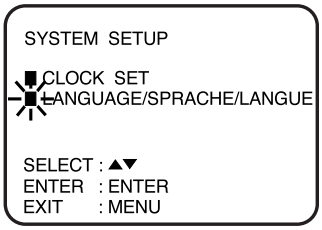
Preparation

- Press the I/⏻ button to turn on the DVD/VCR.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

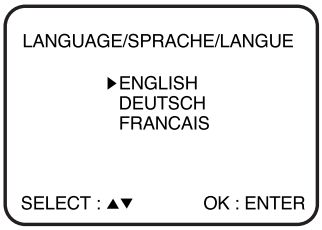
1 Press **VCR MENU**. Press ▲ or ▼ to select the SYSTEM SETUP.
Then press **ENTER**.



2 Press ▲ or ▼ to select the LANGUAGE. Then press **ENTER**.



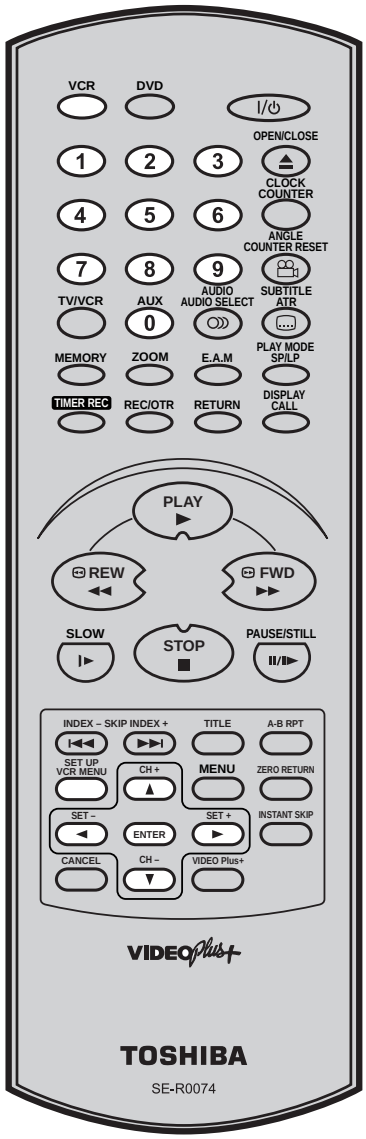
3 Press ▲ or ▼ to select the desired language.
Then press **ENTER**.



4 Press **VCR MENU** repeatedly until the TV picture appears on the screen.

Setting the Time and Date Manually

You must set the date and time manually for timer recordings if Automatic tuning process did not set them correctly.



Notes:

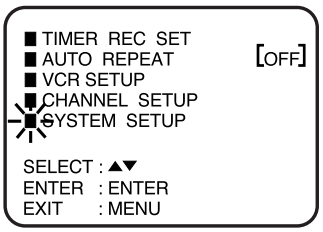
- The AUTO TIME function adjusts the clock only if the error is within 5 minutes.
- The VCR automatically adjusts the clock setting for Daylight Saving Time once you set AUTO TIME to ON.

Preparation

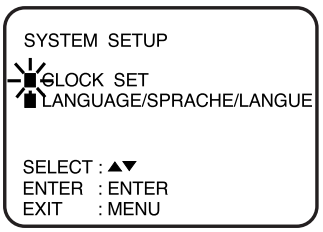
- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

Example: Setting the clock to 11:30, 26 Oct. 2002.

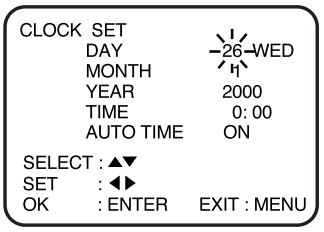
1 Press **VCR MENU**. Press ▲ or ▼ to select the SYSTEM SETUP. Then press **ENTER**.
The step-2 will appear when clock is not set.



2 Press ▲ or ▼ to select the CLOCK SET. Then press **ENTER**.

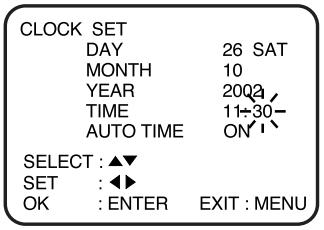


3 Press ◀ or ▶ repeatedly until 26 appears. Then press ▼ to continue.



4 Set the **month**, **year**, **hour** and **minute** in the same way as in step **3**. Then press **ENTER**.

- In case of an error, press ▲ to go back to one step and enter again.



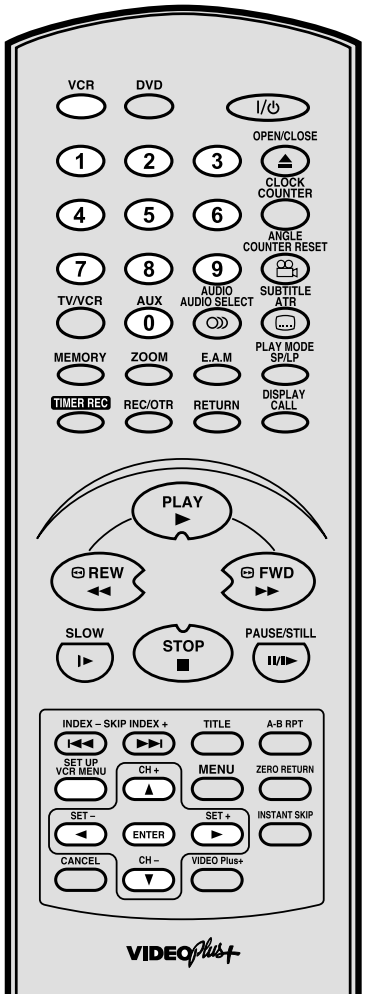
5 Press ◀ or ▶ to select AUTO TIME ON or OFF.
The VCR automatically corrects the clock setting every hour once you set AUTO TIME to ON.

6 Press **VCR MENU** repeatedly until the TV picture appears on the screen.

7 The clock will begin operation.

Tuning the TV Stations Manually

This VCR has one built-in tuner to receive broadcasts. Before you record a TV broadcast, you must set and preset all channels. This VCR can preset up to 80 channels.



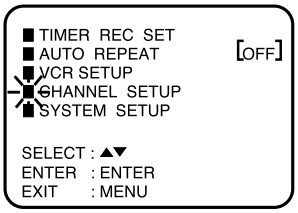
CH 01	BBC 1
CH 02	BBC 2
CH 03	ITV
CH 04	CH4
CH 05	CH5
CH 06	SATELLITE

Note:
Occasionally, the auto search might catch a weak signal and stop. If the TV station signal is weak, you shouldn't store this station.
In that case restart the auto search using ◀ or ▶.

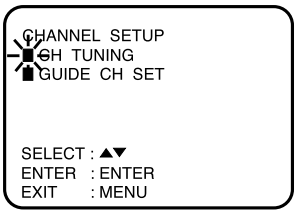
Preparation
- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

Example: Preset the BBC 2 on programme position 2.

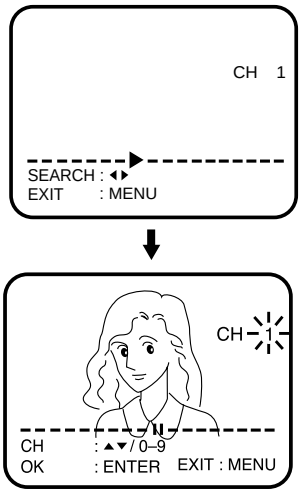
1 Press **VCR MENU**. Press ▲ or ▼ to select the CHANNEL SETUP. Then press **ENTER**.



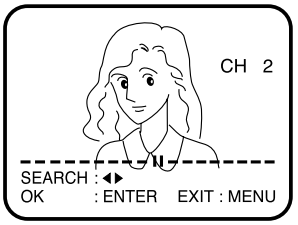
2 Press ▲ or ▼ to select the CH TUNING. Press **ENTER** to select CH TUNING screen.



3 Press ◀ (falling frequency) or ▶ (rising frequency) once to start the search. It stops at each broadcast automatically (" ▶ " changes to " II "). Press ◀ or ▶ repeatedly until BBC 2 appears. Only in case of receiving a weak broadcast (drifting picture), does search fail to stop. If you want to stop, press ◀ or ▶. Press **ENTER** to preset. The search menu screen will disappear if the next mode is not activated in less than 50 seconds.



4 Press ▲ or ▼ repeatedly until 2 is displayed. (Or enter **0 2** with the **1 to 0 numbered keys**). Then press **ENTER**.

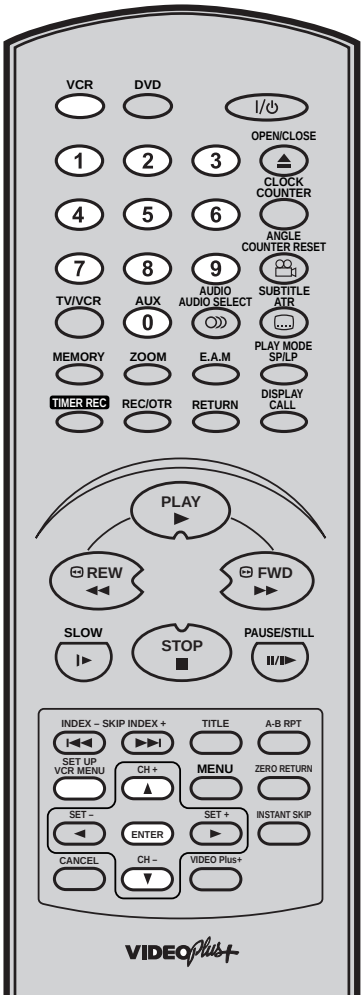


5 Repeat the steps **3** and **4** to preset other TV stations.

6 Press **VCR MENU** repeatedly until the TV picture appears on the screen.

Setting the VIDEO Plus+® Channel Number (Guide CH)

The TV stations must be stored according to the tuning guide given on page 13, otherwise the VIDEO Plus+ feature will not work. If for any reason you did not select channels BBC1, BBC2, ITV, CH4, CH5 and Satellite in channel positions 1 through to 6 respectively, you must set each VIDEO Plus+ channel number (GUIDE CH) manually.



GUIDE CHANNEL TABLE

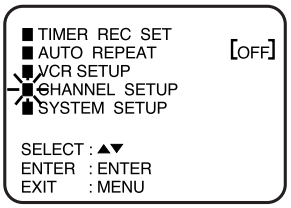
TV STATION	GUIDE CH
BBC1	1
BBC2	2
ITV	3
CH4	4
CH5	5
Satellite	6

Preparation

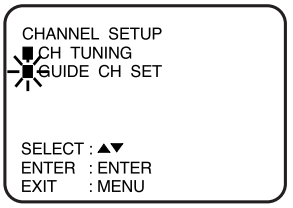
- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

Example: Satellite channel has been incorrectly stored on channel 8 of your VCR.

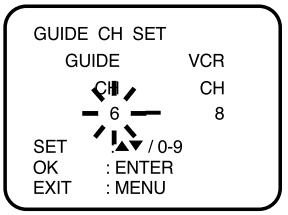
1 Press **VCR MENU**. Press ▲ or ▼ to select the CHANNEL SETUP. Then press **ENTER**.



2 Press ▲ or ▼ to select the GUIDE CH SET. Then press **ENTER**.

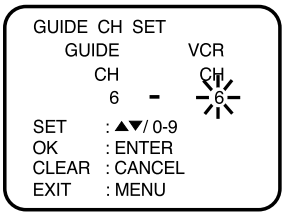


3 Enter "SAT" with ▲ or ▼ or **number keys**. Then press **ENTER**.



4 Enter "**6**" with ▲ or ▼ or **number keys**. Then press **ENTER**.

If you have connected your satellite using the scart socket, you must select "AV" for the VCR CH number.



5 For other Codes, repeat steps **3** and **4**.

6 Press **VCR MENU** repeatedly until the TV picture appears.

Loading and Unloading a Cassette Tape

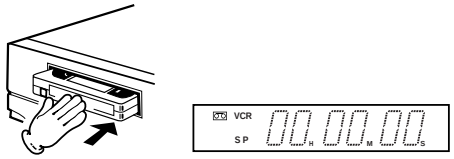
Use only video cassette tapes marked VHS and S-VHS.

SQPB

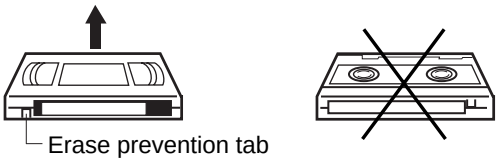
- Cassettes marked “VHS” (or “S-VHS”) can be used with this video cassette recorder. However, S-VHS recording is not possible with this model.
- This model is equipped with SQPB (S-VHS QUASI PLAYBACK) that makes it possible to play back S-VHS recordings with regular VHS resolution.
- HQ VHS is compatible with existing VHS equipment.
- SQPB playback can be seen only at PAL SP mode.

Loading

Push the centre of the tape until it is automatically inserted.



Insert the cassette tape with its labeled side facing up and the erase prevention tab positioned at your left. An inverted cassette tape cannot be inserted.



Automatic power ON

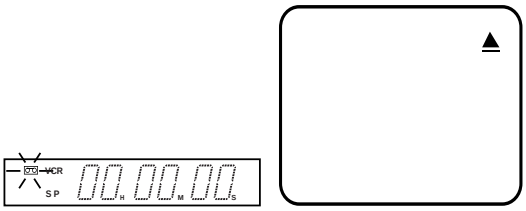
When you insert a cassette tape the DVD/VCR power will turn ON automatically.

Automatic playback

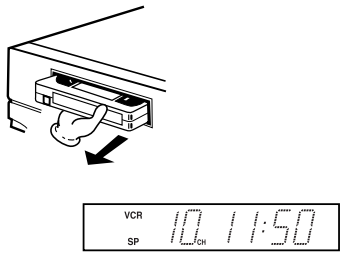
When loading a cassette tape without an erase prevention tab, playback will start automatically.

Unloading

1 Press **EJECT** on the unit. Even if a tape is being played, press this button only once.



2 Remove the cassette tape.

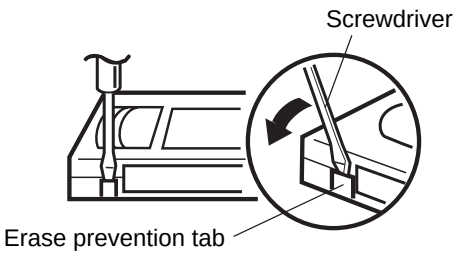


Automatic tape eject

This VCR will automatically rewind the tape when the tape has ended. And when the tape is rewinded to its beginning, the cassette tape will be ejected automatically.

To prevent accidental erasure

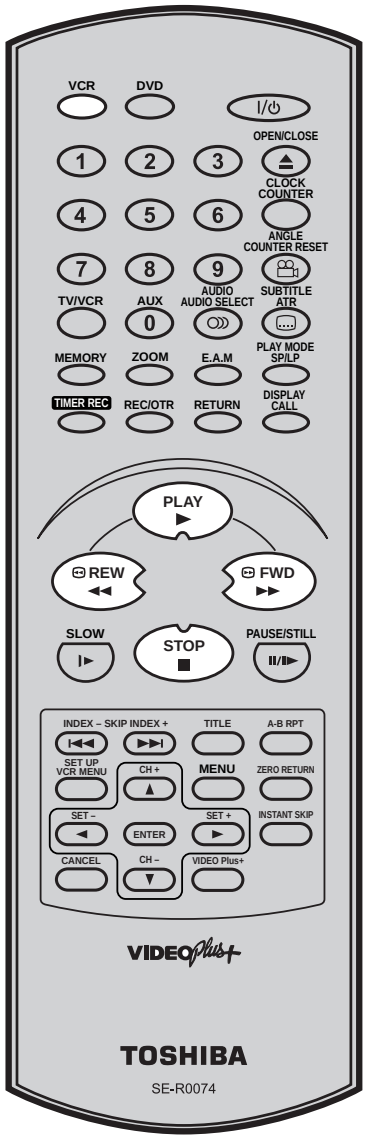
Remove the erase prevention tab with a screwdriver.



To record again

Cover the hole with a piece of adhesive tape.

Cassette tape playback

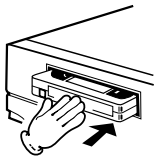


- This VCR selects the playback tape speed SP or LP automatically.
- The Cassette tape and DVD disc can be played back simultaneously. If you press **VCR** or **DVD**, the tape playback and DVD playback alternate with each other on the screen.

Preparation:

- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

1 Load a prerecorded tape (When loading a cassette tape without the erase prevention tab, playback will start automatically).

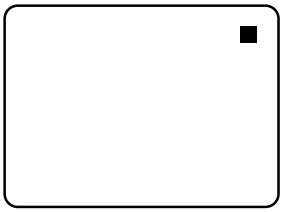


2 **To start playback**

Press **PLAY**.
Playback will start.
If the cassette has not loaded yet, ⏀ will blink for 4 seconds.

To stop playback

Press **STOP**.

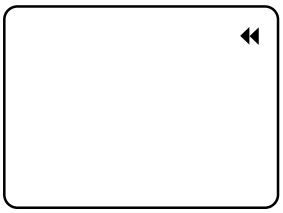


To rewind the tape or forward it rapidly

Stop the playback or recording with **STOP**.

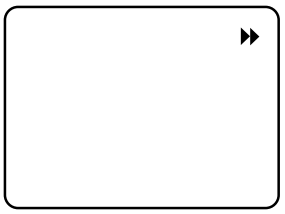
To rewind the tape:

Press **REW**.



To forward the tape:

Press **FWD**.



To stop the tape-winding, press **STOP**. To switch to playback directly (without ■), press **PLAY**.

Forward/Reverse picture search mode

When the tape is being winded, you can switch to picture search mode (see next page). To do this, press **REW** or **FWD** and hold it down. The unit will resume the tape winding as soon as the button is released.

NTSC video cassette playback

When using a pre-recorded NTSC video cassette tape, the connected TV set must operate with a 60 Hz vertical frequency. Otherwise the on-screen picture will be affected by vertical rolling. Even if your VCR set is capable of processing NTSC video signals, the picture may be shortened vertically (appearance of black bars at the top and at the bottom of the TV screen). The dubbing of a NTSC video cassette tape to a standard PAL VCR is not possible.

Special playback/Playback sharpness/Skip Search

Special playback

Picture Search

Reverse picture search function

Press **REW** x 1 or x 2 during the playback.

Forward picture search function

Press **FWD** x 1 or x 2 during the playback.
To return to playback: Press **PLAY**.

Still Picture

Press **PAUSE/STILL** during playback. To resume normal playback: Press **PLAY**.

Slow Motion

During playback press **SLOW**.
You can change the slow speed by the additional pressing of **SLOW**.
To return to playback: Press **PLAY**.

Slow tracking and vertical lock adjustment

If noise bars appear in the picture during slow motion, press the **SET +** or **–** to reduce the noise bars.
If the still picture jitters excessively, press **SET +** or **–** to stabilize the still picture.

Frame by Frame picture

During playback, press **PAUSE/STILL** one by one: The picture advances frame by frame.
To return to playback: Press **PLAY**.

Adjusting tracking condition

Automatic tracking adjustment

Whenever you insert a tape and start playback, automatic tracking starts working and continuously analyzes the signal to enable optimum picture quality during playback.

Manual tracking adjustment

If automatic tracking cannot eliminate noises well during playback, press **SET +** or **SET –** to eliminate the noises. “MANUAL TR.” will appear. Press it briefly for a fine adjustment, or press and hold for a coarse adjustment.

To return to automatic tracking, press A. TRK.

Notes:

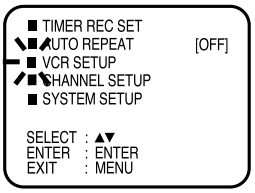
- The audio output is muted during SPEED SEARCH, STILL, FRAME ADVANCE and SLOW MOTION.
- During picture search mode there will be noise bars which are caused by the system.
- The Special Playback will automatically change to playback after approx. 5 minutes to protect the video tape against excessive wear.

Playback sharpness

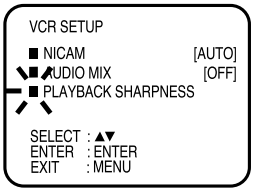
Adjust the sharpness of playback picture during playback. During slow motion, still picture and picture search, sharpness-adjusting is impossible.

1 Start the playback of video tape.

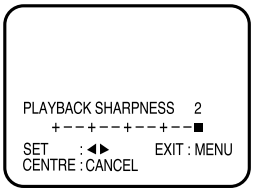
2 Press **VCR MENU**. Press ▲ or ▼ to select VCR SETUP. Then press **ENTER**.



3 Press ▲ or ▼ to select PLAYBACK SHARPNESS. Then press **ENTER**.



4 Press ▶ or ◀ to adjust the playback sharpness to the level you reguire.



softer ⟷ sharper

5 Press **VCR MENU** repeatedly until the TV picture appears on the screen.

Note:

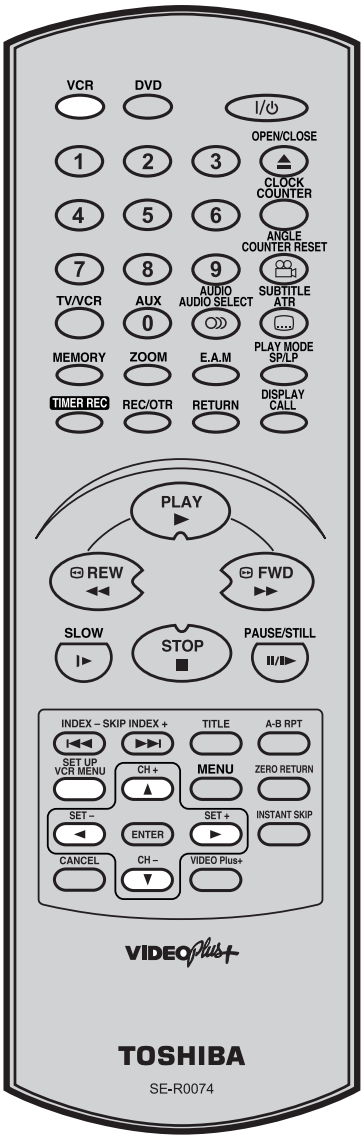
To return to the initial sharpness setting, press **CANCEL** while the sharpness setting screen is appearing.

Skip Search

Each time you press **INSTANT SKIP** while a tape is playing, the unit will fast-forward ahead 30 seconds on the tape. You may press the button up to six times in a row to move 180 seconds (three minutes) ahead.

For example: 1 press: Approx. 30 seconds of tape
2 presses: Approx. 60 seconds of tape
3 presses: Approx. 90 seconds of tape

If the Repeat function is switched on, the playback will continue until it reaches the tape-end and then rewind to the beginning of the tape. This process will repeat until the unit is turned off.

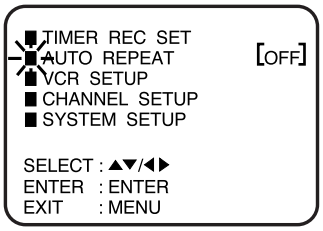


To set the Repeat function

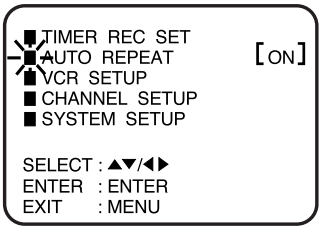
Preparation

- Turn on the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode.

1 Press **VCR MENU**. Press ▲ or ▼ to select the AUTO REPEAT.



2 Press ◀ or ▶ to select [ON] or [OFF].



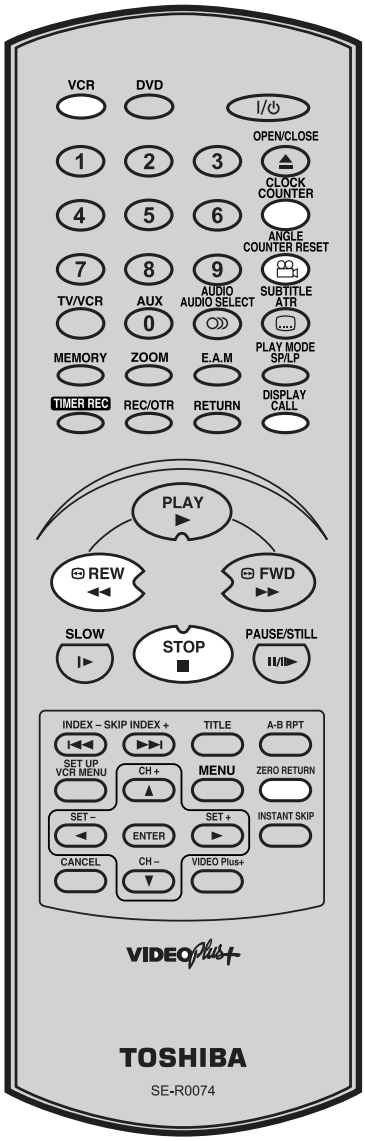
3 Press **VCR MENU** repeatedly until the TV picture appears. If "ON" has been selected, the tape will be repeatedly played.

Note:
To cancel the auto repeat mode, follow the above steps **1** and **2**, then select "OFF" and confirm by pressing **VCR MENU**.

Counter Display

ZERO RETURN function

This function makes tape-rewinding stop at the counter 00:00:00 position automatically.



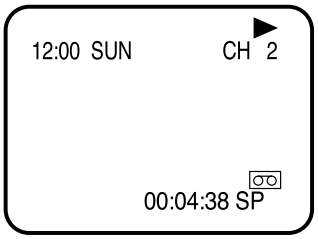
Notes:

- When you load a video cassette, the display indication changes to "00:00:00".
- The counter display does not function on non-recorded (blank) sections of the tape. When you rewind, fast forward or play tapes through blank sections, the counter display stops.

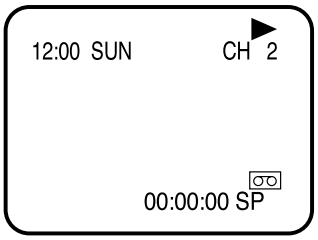
Preparation:

- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

1 Press **DISPLAY**.
The counter display shows the tape running time during playback or recording.
The Recorder will indicate REC during recording for itself.



2 Press **COUNTER RESET** at the desired tape position.
The counter display will be reset to the "00:00:00" position (e.g. the beginning of recording).

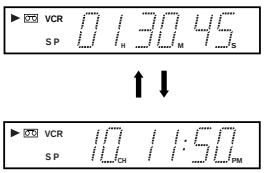


3 Press **STOP** when playback or recording is finished.
Press **ZERO RETURN**.
The tape will be rewinded or fast forwarded and automatically stop at the ”00:00:00” position.

4 Press **DISPLAY** once again to make the all indicator disappear.

The CLOCK COUNTER button

Press **CLOCK COUNTER** during the playback. The clock and tape counter alternate with each other in the display.

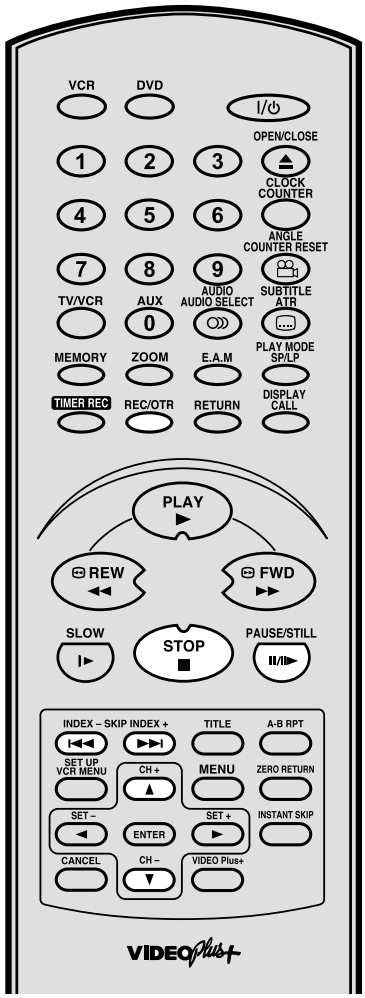


Note:

You can set the tape counter to 00:00:00 with **COUNTER RESET** anytime. Therefore, the counter display can also indicate 00:00:00, even when the tape counter does not reach its beginning yet. Even if the tape counter indicates 00:00:00, it can be rewinded moreover. If the tape was rewinded over the point of 00:00:00, the minus mark (–) appears in the counter display. Although the tape counter seems to forward when you press **REW**, in fact the tape is being rewinded. When the tape reaches the beginning, the tape-rewinding stops automatically.

Video Index Search System

Whenever a recording is begun an invisible index mark is recorded on the tape.These index marks are all identical, and each mark means: "Here starts a new recording". Every DVD/VCR equipped with the Video Index Search System (VISS) can locate these marks at the beginning of any recording.

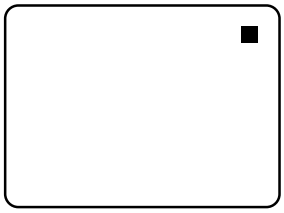


Notes:

- When you record an INDEX mark at the very beginning of the tape, the mark may not be found.
- During INDEX search, the tape may stop and begin to play at a slightly different location.
- INDEX may not function properly with old or worn out video tapes.
- INDEX marks may not be found if it is extremely close to the point where the search began.
- In recording, if you stop recording temporarily, the INDEX mark is not recorded on the tape.

Example: Indexing of TV commercials.

1 Start playback and wait until the end of the TV commercial is reached, then press **STOP**.

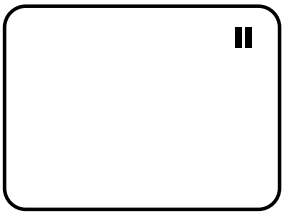


2 Press **REC/OTR**. When the "INDEX" on-screen indication goes off, **STOP** may be pressed. This short recording process will be sufficient to set an index mark.
This will result in about 10 seconds of the TV commercials to be overwritten by another recording. Due to the system the end of this recording will be followed by a recording gap (noise signal) of approx. 5 seconds.

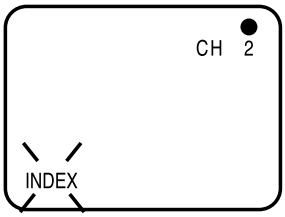
Recording several Index Marks

Due to the system only one index mark will be recorded at the beginning of a recording. If you intend to set several index marks during a single recording, follow the procedure below:

1 At the point of the recording where an index mark is to be set press **PAUSE/STILL**. The unit will switch to the recording pause mode.

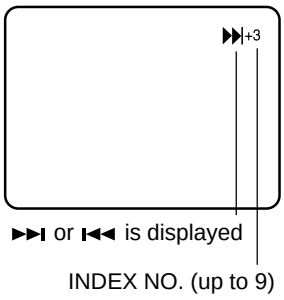


2 Press **CH** repeatedly to switch back to the original TV program. Press **PAUSE/STILL** to resume recording.

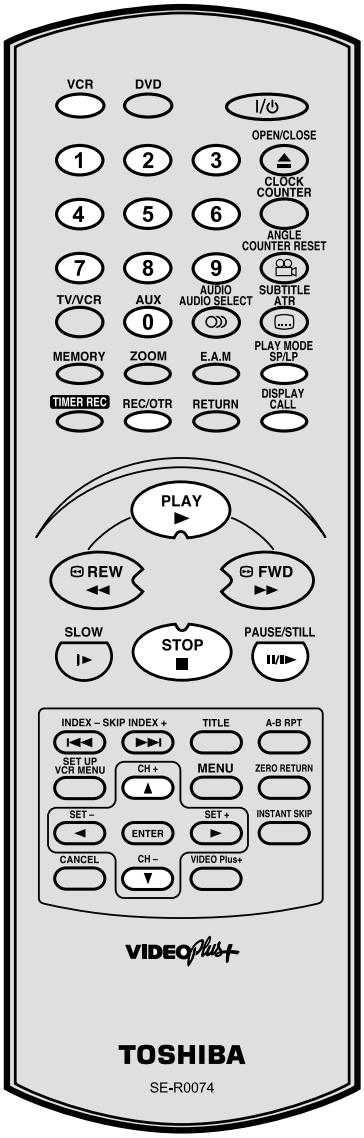


Index Search

Press **INDEX +** or **–** during stop or play mode.
For Succeeding programs:
Press **INDEX +**.
For Preceding programs:
Press **INDEX –**.
(Additional press increases the INDEX NO. up to 9.)
When the **INDEX +** or **–** is pressed, the unit starts searching the INDEX NO. selected and finds the portion, then playback starts automatically.
To stop the Index Search, press **STOP**.



Recording a TV Programme



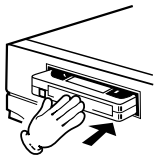
Notes:

- Since the DVD/VCR has a built-in TV tuner the TV set may be turned off when recording. The TV set may only be used to check for accurate program adjustments or to monitor recordings.
- You can confirm on the TV-screen whether you selected SP or LP. Press **DISPLAY** to see the status display. (see page 25)
- If you wish to watch the DVD playback during the normal recording on VCR, press **DVD** to change to DVD mode and perform the DVD playback (see page 38).

Preparation:

- Turn on the TV, and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

1 Load a blank cassette tape with the erase prevention tab intact. (The DVD/VCR will automatically turn on.)

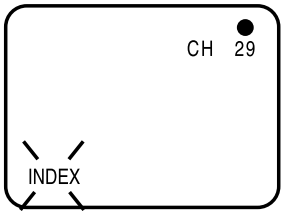


2 Select the program(e.g.29) you want to record with **CH +/–** or **number keys**.

1~9 : e.g. 5 = press "**5**"
10~80 : e.g. 29 = press "**2**" and "**9**".

3 If a recording in Long Play mode is intended, press **SP/LP** to display "LP". (see Note below)

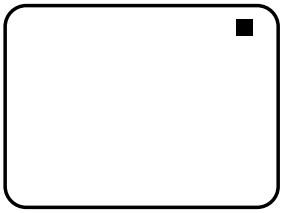
4 On the VCR, press **REC**.
Or on the Remote, press **REC/OTR**.
" ● " will appear on the screen for about 4 seconds and "●" will appear on the display.



If the erase prevention tab is removed, the tape will eject when **REC/OTR** are pressed for recording. (see p.18)

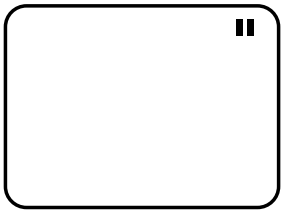
To Stop Recording

Press **STOP**.



To Stop Recording Temporarily

To stop a recording for a short period of time press **PAUSE/STILL**. Press this button again if you want to resume the recording.

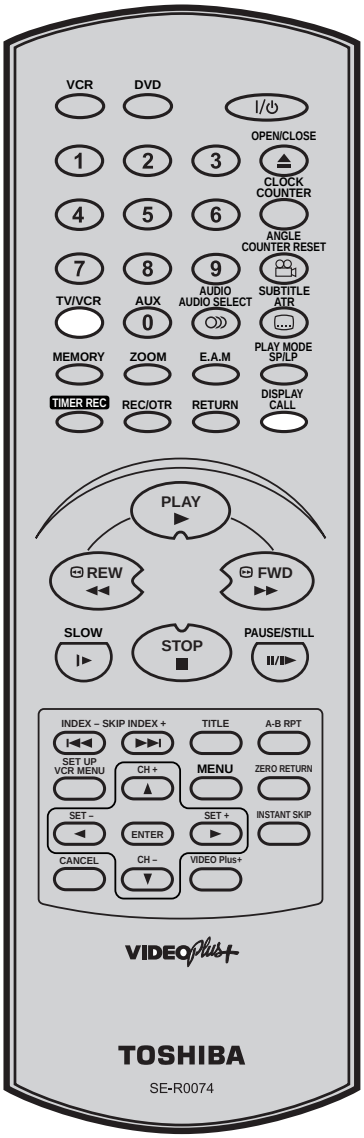


Attention:

A safety circuit turns the pause mode off automatically after 5 minutes, and the DVD/VCR will stop the recording mode.

Recording with a SCART Lead:

You can record a programme using the TV receiver of the DVD/VCR and at the same time watch another programme on the TV set using its receiver. As the DVD/VCR automatically switches the TV set the following points should be observed:



Auto Rewind Feature

The DVD/VCR will automatically rewind when the tape has ended (except during OTR and TIMER REC). It will also eject the cassette tape.

1 Press **TV/VCR** until "VCR" appears on the display. Select the program on the DVD/VCR you want to record. This program can be watched on the screen and recorded by the DVD/VCR.

"VCR" indicator goes on.

2 While the VCR is recording press **TV/VCR** until the "VCR" indicator on the display goes off. The TV set now displays the program of its built-in receiving module. Select the TV channel you want to watch on the TV set. Although the TV set now shows another program the DVD/VCR will continue recording the previously selected programme.

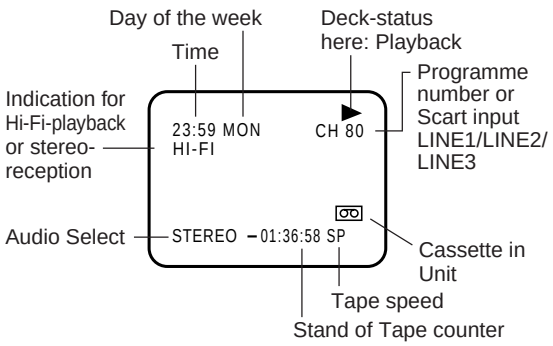
"VCR" indicator goes off.

3 Using **TV/VCR** you can switch the TV screen between the DVD/VCR picture and the TV picture. If the "VCR" indicator is lit on the display, you will watch the DVD/VCR picture. This has no trouble on the recording.

"VCR" indicator goes on.

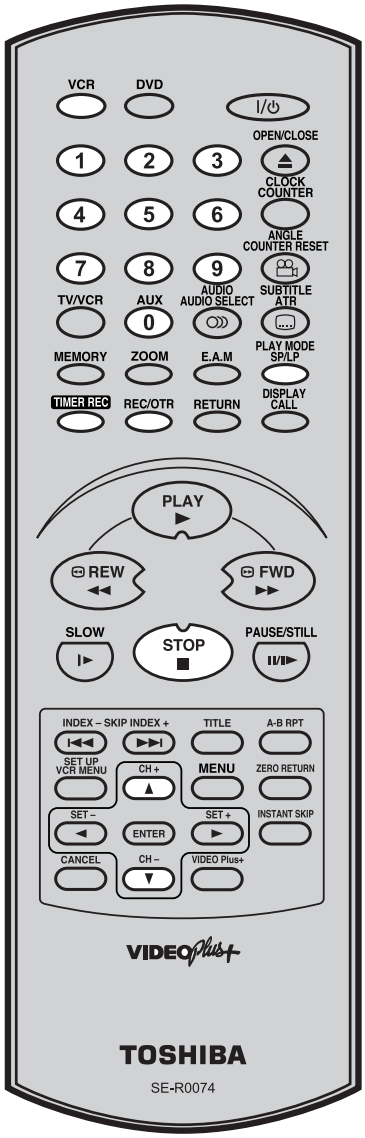
To Display VCR operation Status

Press **DISPLAY**. The clock, day of the week and more informations will be indicated.
To cancel the indicating: Press **DISPLAY** until all indicator disappear.



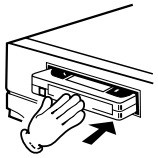
One-touch Timer Recording (OTR)

The one-touch timer recording feature provides a simple and convenient way to make a timed recording.



Preparation:
- Turn ON the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

1 Load a blank cassette tape with the erase prevention tab intact. (The DVD/VCR will automatically turn on.)

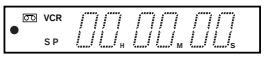


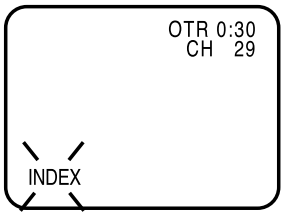
2 Select the program (e.g.29) you want to record with **CH +/–** or **number keys**.

1~9 : e.g. 5 = press "**5**"
10~80 : e.g. 29 = press "**2**" and "**9**".

3 If a recording in Long Play mode is intended, press **SP/LP** (TAPE SPEED) to display "LP". (see note on page 28)

4 Press **REC** on the VCR or **REC/OTR** on the Remote to begin recording. Press **REC** on the VCR again to stop recording after 30 minutes. Each additional press of **REC** will increase recording time as shown in the chart below, up to a maximum of 5 hours. The OTR and recording time will appear on the screen for about 4 seconds.





Tape speed: SP

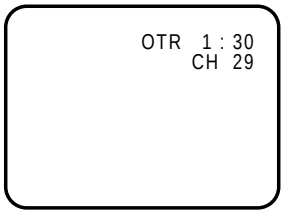
Recording → 0:30 1:00 → 1:30
↑ ↓
5:00 ← 4:00 ← 3:00 ← 2:00

Tape speed: LP

Recording → 0:30 → 1:00 → 1:30 → 2:00
↑ ↓
10:00 ← ····· ← 5:00 ← 4:00 ← 3:00

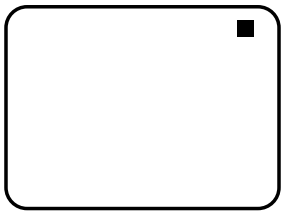
To Extend the Recording Time

Press **REC/OTR** repeatedly until the desired time appears on the display.



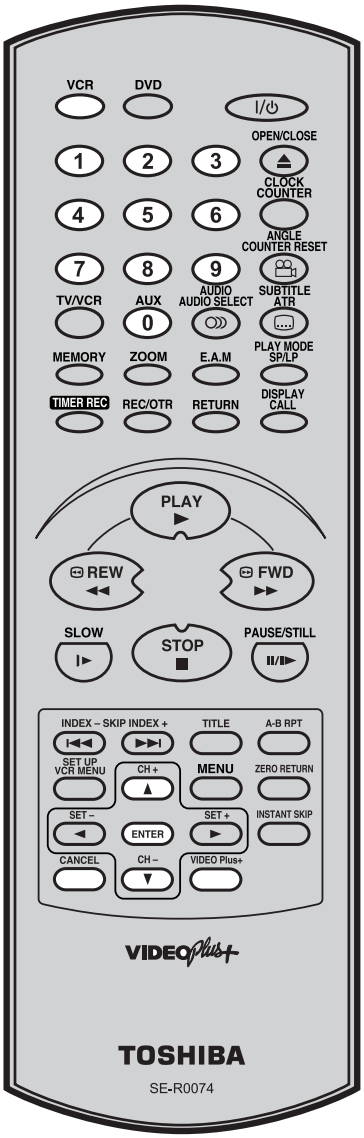
To stop the OTR

Press **STOP**.



Notes:
- If you wish to watch the DVD playback during the OTR, press **DVD** to change to DVD mode and perform the DVD playback (see page 38).
- If the tape supply has not sufficed for OTR recording, the clock symbol (⏲) will blink at the tape-end and then VCR mode will change to DVD mode.
  In this case, press **TIMER REC** to cancel the ⏲ blink or press **EJECT** to remove the cassette tape.

Look up the PlusCode Number in an appropriate TV programme magazine. Select the desired TV programme for recording and refer to the PlusCode Number next to it.



Notes:

- The built-in timer stores 8 memories. If the "PROGRAM FULL" indication appears, you must delete one memory (see page 31).
- When the power supply is interrupted for more than 30 minutes, the preset programme is cleared. In this case, you have to set the timer again.

VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.

Preparation

- Turn on the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

1 Press **VIDEO Plus+**.

Note: If any button is not pressed within 60 seconds, the Recorder switches back to TV operation.

```
PLUSCODE NO.  ---------
          ▶ONCE
            DAILY
            WEEKLY
PLUSCODE NO. : 0–9
SELECT       : ▲▼
CLEAR        : CANCEL
OK           : ENTER
EXIT         : PROG.
```

2 Enter the PlusCode Number using **number keys**.

- In case of an error, press **CANCEL** and enter the desired number again.

```
PLUSCODE NO.  57378----
          ▶ONCE
            DAILY
            WEEKLY
PLUSCODE NO. : 0–9
SELECT       : ▲▼
CLEAR        : CANCEL
OK           : ENTER
EXIT         : PROG.
```

3 Press ▲ or ▼ to select ONCE, DAILY or WEEKLY.

ONCE = To record a programme only once

DAILY = To record TV programmes transmitted daily

WEEKLY = To record TV programmes transmitted once a week.

```
PLUSCODE NO.  57378----
          ▶ONCE
            DAILY
            WEEKLY
PLUSCODE NO. : 0–9
SELECT       : ▲▼
CLEAR        : CANCEL
OK           : ENTER
EXIT         : PROG.
```

4 Press **ENTER**. By the PlusCode Number, the entered data appears on the screen. Select your tape speed.

- If the entered Number is not correct, the indicator "PLUS CODE NO. ERROR" will appear. Enter the correct number.

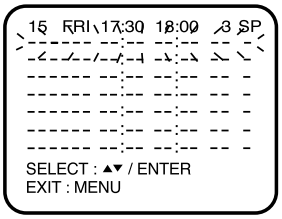
```
PLUSCODE NO.   57378----
DATE     15 FRI
START    17:30
END      18:00
CH       31
SPEED    -SP-
PDC      OFF
SELECT : ▲▼
SET    : ◀▶
EXIT   : MENU      OK : ENTER
```

If you have selected Daily or Weekly in step **3**, then you can select a recording date again. The date must blink. If it does not blink, then press ▲ or ▼ repeatedly until the DATE blinks. Then press ◀ or ▶ repeatedly until the desired date appears. The following date options are available:
SUN-SAT: all dates from Sunday to Saturday, or
MON-SAT: only from Monday to Saturday, or
MON-FRI: only from Monday to Friday.
WKL-MON: each Monday, WKL-TUE: each Tuesday
WKL-SUN: each Sunday, etc.

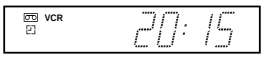
Recording period extension

The recording end-time will be set by VIDEO Plus+ automatically. However you can extend the recording end-time manually. The time END must blink.
If it does not blink, then press ▲ or ▼ repeatedly until the time end blinks. Then press ▶ to extend.

5 Press **ENTER** after the confirmation. Then press **VCR MENU** repeatedly until the TV picture appears. To enter another programme, repeat steps **1** - **5**.

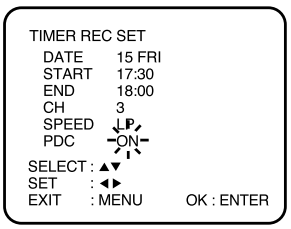


6 Although the data is stored in the timer memory, the timer function is not yet ready for recording. To accomplish this, activate it by pressing **TIMER REC**.
If no cassette tape is loaded, the clock symbol is blinking.



To record with the PDC (Programme Delivery Control) system

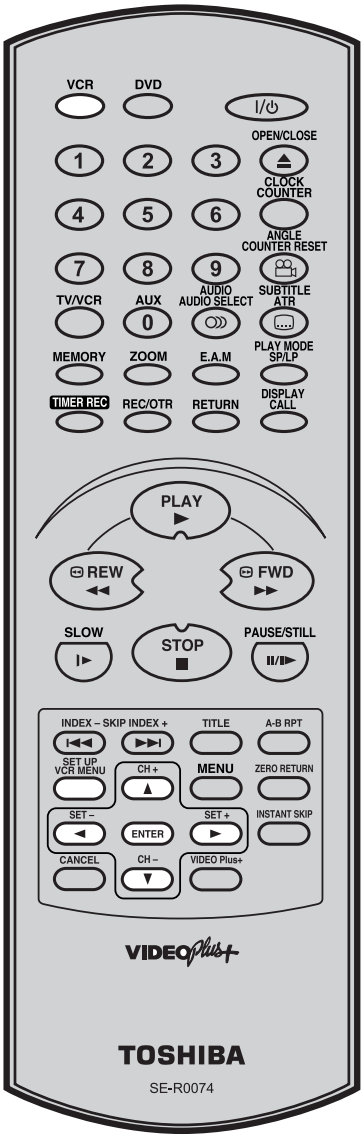
The PDC system starts recording when it picks up a special signal transmitted by the broadcaster with the TV programme – even if the TV programme starts early, late or runs on longer than scheduled. In step 4, press ▼ repeatedly until PDC OFF flashes, then press ◀ or ▶ to display "ON" for recording with PDC.



Notes:

- As long as the timer is activated (clock symbol indicated on the display), you cannot use the VCR. If you want to use the VCR, first press **TIMER REC** to deactivate the timer.
- Not all TV Stations transmit PDC signal all of the time, therefore it is advisable to check before setting PDC to ON, if you do set PDC to ON and no signal is received your recording might not take place at all. To check PDC status, change to the channel on your DVD/VCR you wish to record from, if the word "PDC" appears on the screen for a few seconds then that channel is broadcasting PDC and you can set the feature to ON.

The built-in timer allows unattended recording of up to 8 programmes within 1 month.



Notes:

- When the power supply is interrupted for more than 30 minutes, the preset programme is cleared. In this case, you have to set the timer again.
- If you want to set the timer with the PDC function, see "To record with the PDC system" on page 28.

Preparation

- Turn on the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)
- Load a video cassette with the erase prevention tab intact. Make sure that the time and date are correct.

Example: Timer recording for the 23rd, Friday, on channel 3, 19:30 to 21:30 and LP mode.

1 Press **VCR MENU**.

Press ▲ or ▼ to select the TIMER REC SET. Then press **ENTER**.

```
TIMER REC SET
AUTO REPEAT          [OFF]
VCR SETUP
CHANNEL SETUP
SYSTEM SETUP

SELECT : ▲▼
ENTER  : ENTER
EXIT   : MENU
```

2 Each line stands for one programme of the 8 memories. Select one line with ▲ or ▼ . Then press **ENTER**.

```
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
-------  --:--  --:--  --  --
SELECT : ▲▼ / ENTER
EXIT: MENU
```

3 Set the desired dates with ◀ or ▶. Then press ▼ to accept them.

- Daily/weekly settings can be found by pressing ◀ or ▶ repeatedly (see page 30).

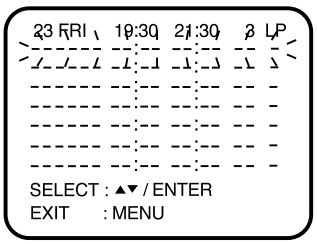
```
TIMER REC SET
  DATE      23 FRI
  START     11:30
  END       --:--
  CH         1
  SPEED      SP
  PDC        OFF
SELECT : ▲▼
SET    : ◀▶
EXIT   : MENU
```

4 Set the **Starting time (19:30)**, **ending time (21:30) channel (3)** and **tape speed (LP)** in the same way as in step **3**.

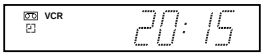
- In case of an error, press ▲ to go back to the previous step and repeat.

```
TIMER REC SET
  DATE      23 FRI
  START     19:30
  END       21:30
  CH         3
  SPEED      LP
  PDC        OFF
SELECT : ▲▼
SET    : ◀▶
EXIT   : MENU   OK : ENTER
```

5 Press **ENTER** to accept them. To enter other programmes, repeat steps **2** to **4**, or press **VCR MENU** repeatedly until the TV picture appears.



6 Although the data is stored in the timer, it is not ready for recording. To start timer recording, press TIMER REC to turn it on. When no video cassette is loaded, the clock symbol is blinking.

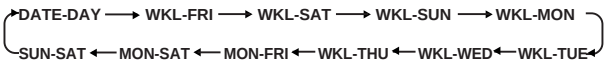


When you turn the unit off, the timer will be switched on automatically. The clock symbol will appear on the display. If you still want to use the recorder, press TIMER REC first. Then the clock symbol will disappear from the display.

Notes:
- In case of a timer recording from the Scart socket, proceed as follows: When "**CH**" is blinking in picture/step **4**, press ◀ or ▶ repeatedly until "LINE" appears.
- If the clock symbol blinks when the timer recording is completed, the TV programme has not been completely recorded because of an insufficient tape supply.
- As long as the timer is activated (clock symbol indicated on the display), you cannot use the DVD/VCR. If you want to use the DVD/VCR, press TIMER REC to deactivate the timer.

Weekly (e.g. WKL-TUE: each Tuesday) or daily (e.g. MON-SAT Monday to Saturday) Timer recording

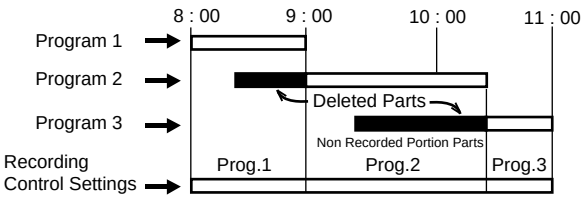
Follow the procedure for timer recording on the previous page. In picture/step **3** (when date and day is blinking), press ▶ repeatedly until the desired setting appears (weekly or daily).



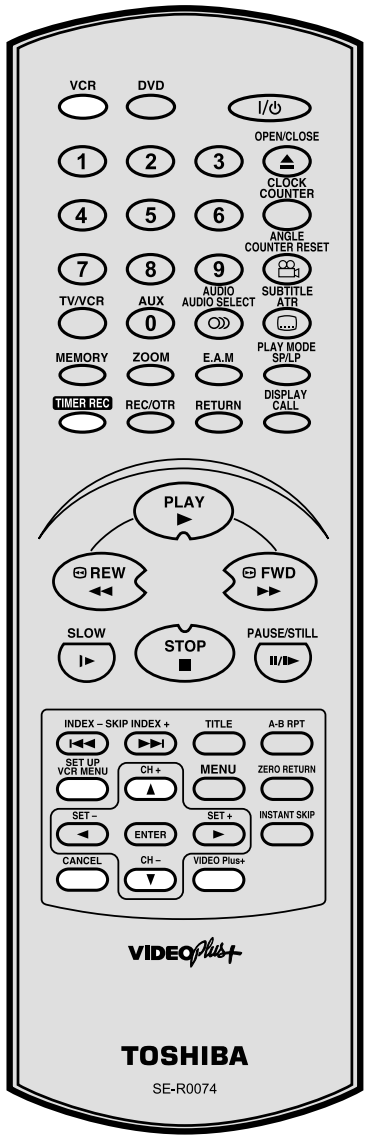
Set other START, END, CH, SPEED as previous pages.

In case of overlapping Timer programmes

- Do not overlap timer programmes as portions of the conflicting programmes will be lost. The first recording time has priority over the next recording time as shown in the diagram below.



Notes:
- The daily/weekly recording can be made continuously until the recording is cancelled or the tape reaches the end.
- During timer recording, the automatic rewinding mechanism does not function.

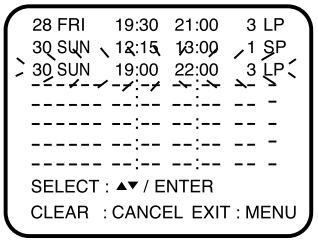


Confirmation/Cancellation of the Timer Recording

1 If the Timer has been activated, now press **TIMER REC** to deactivate the timer. The clock symbol will disappear. Then press **VCR** to change to VCR mode.

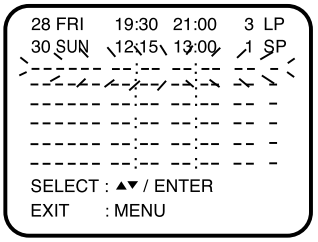
2 **To confirm a Timer programme.**

Press **VIDEO Plus+** twice. All the timer programmes will appear.



3 **To cancel a Timer programme.**

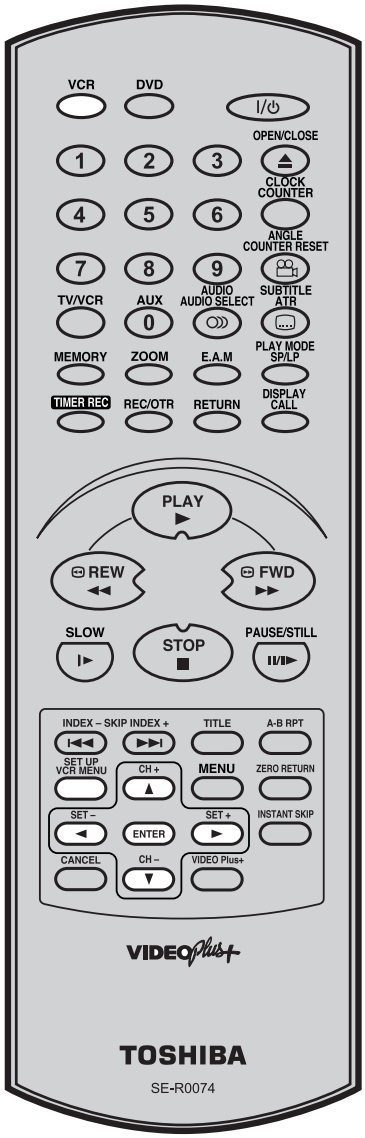
Press ▲ or ▼ to select the timer programme you wish to cancel.
Then press **CANCEL**.
This line is now cancelled.



4 Press **VCR MENU** (or **VIDEO Plus+**) button repeatedly until the TV picture appears.

NICAM Stereo Recording and Playback

This DVD/VCR is capable of recording sound in Hi-Fi system. The recording will be performed automatically. NICAM STEREO broadcasts are recorded in its original sound system regardless of the setting. If you wish to record NICAM programmes, select NICAM "AUTO" as follows.



Note:

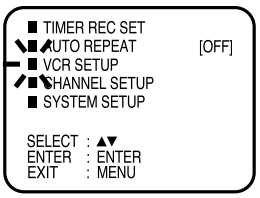
When listening to a stereo broadcast or playing back a tape Hi-Fi recorded in stereo, you have to connect the DVD/VCR with the stereo audio system or the stereo TV. The sound which is output from the RF OUT jack is monaural.

Preparation:

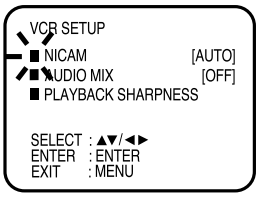
- Turn ON the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

NICAM stereo sound reception:

1 Press **VCR MENU**. Press ▲ or ▼ to select VCR SETUP. Then press **ENTER**.



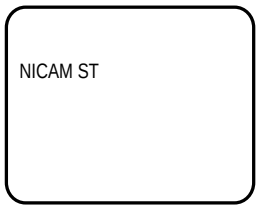
2 Press ▲ or ▼ to select NICAM. Then press ◀ / ▶ or **ENTER** to select [AUTO].



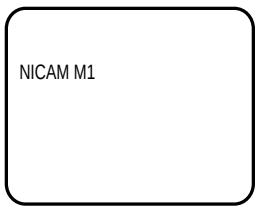
3 Press the **VCR MENU** repeatedly until the TV picture appears.

NICAM programmes are divided into 4 types as shown below.

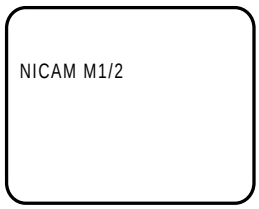
NICAM STEREO broadcast
"NICAM ST" illuminates when a NICAM STEREO broadcast signal is received.



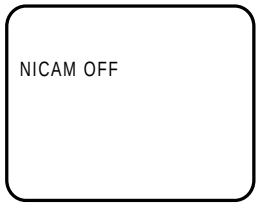
NICAM MONO A broadcast
"NICAM M1" illuminates when a NICAM MONO A broadcast signal is received.

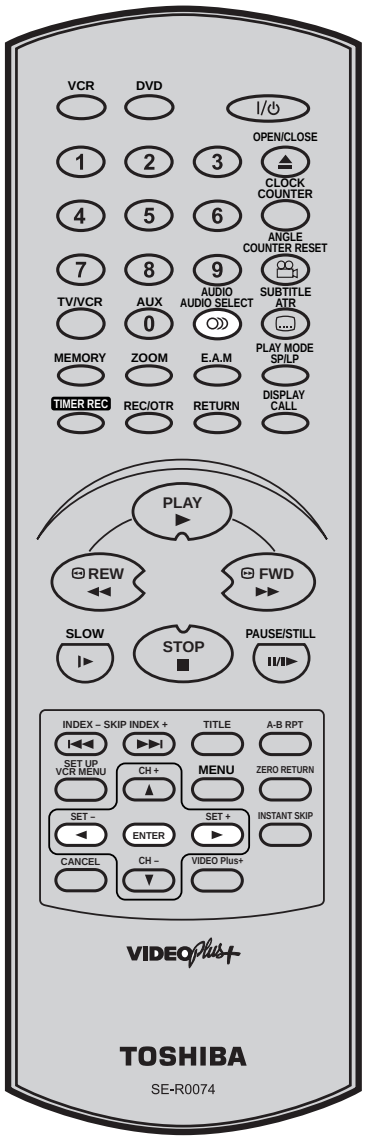


NICAM MONO A B broadcast
"NICAM M1/2" illuminates when a NICAM MONO A and MONO B broadcast signal is received.



NICAM OFF
It will be displayed for the NICAM signal when the "NICAM [OFF]" is selected in menu screen.





Playback

Use **AUDIO** to select under stereo/mono or bilingual playback. See the table below for more information.

On-screen indications (for 4 sec.)	Stereo playback performed in:	Bilingual playback performed as follows:
STEREO	Stereo	Simultaneously both languages from HiFi track (Mixed sounds)
L CH	Left channel signal output from both loudspeakers	One's mother tongue dubbing (Main sound)
R CH	Right channel signal output from both loudspeakers	Original sound track (Sub sound)
MONO	Mono	One's mother tongue dubbing (Main sound)

HiFi signal indication

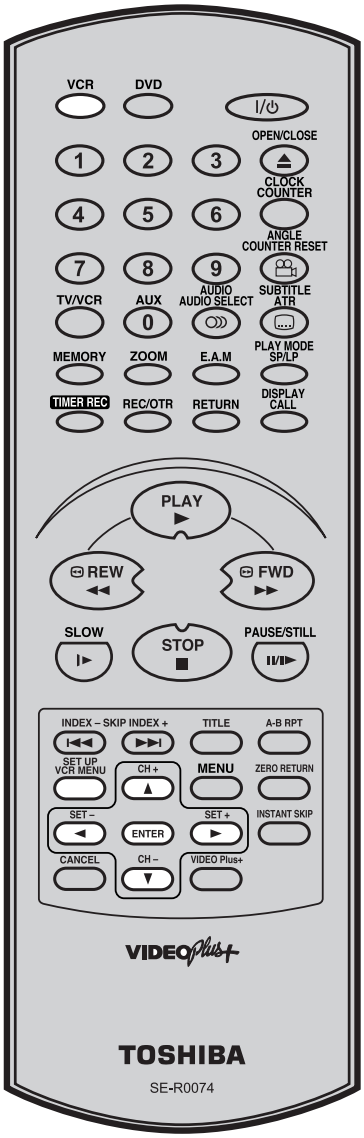
It will be displayed for approx. 4 seconds when playing HiFi video cassette tapes.

Note:

When playing HiFi cassette tapes recorded on another VCR, the sound output may be distorted. This is normal and no indication of a unit malfunction. Try to minimize sound distortions by using **SET +/–** or change to MONO by pressing of **AUDIO**.

Audio Mixing

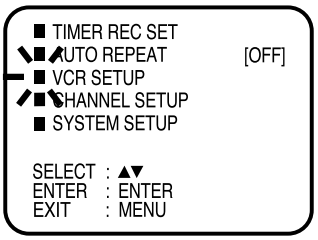
You can listen to both sound tracks (Hi-Fi and MONO), by setting AUDIO MIXING mode.



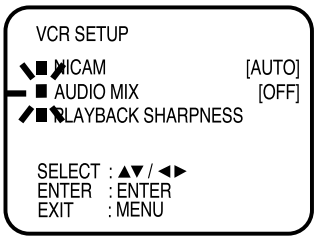
Preparation:

- Turn ON the TV and select the VCR channel on TV.
- Press **VCR** to select the VCR mode. (The VCR indicator will light)

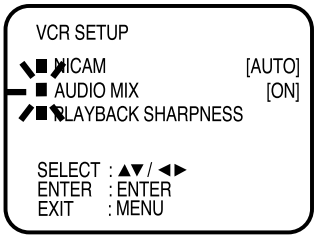
1 Press **VCR MENU**.
Press ▲ or ▼ to select VCR SETUP. Then press **ENTER**.



2 Press ▲ or ▼ to select AUDIO MIX.



3 Press ◄ / ► or **ENTER** to select [ON].
If you select [ON], the unit will play both sound tracks (Hi-Fi and MONO) until the AUDIO MIXING mode is cancelled.



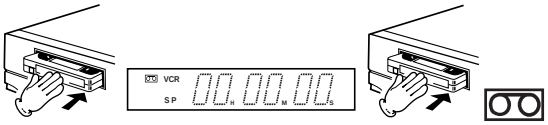
4 Press **VCR MENU** repeatedly until the TV picture appears.

Note:
To deactivate the AUDIO MIX function follow the above procedure from steps **1** to **3**, select [OFF], and confirm the setting by pressing **VCR MENU**.

Duplicating a Video Tape

When you try to connect with a cable, make sure the power of both units have been turned off. Connect the recording unit with the TV. Therefore you can just watch what the recording unit is recording.

1 Load a blank cassette tape with the erase prevention tab intact into the recording DVD/VCR. Load the previously recorded cassette tape into the playback VCR or a video camera.



2 Use **AUX** or **CH** of the recording DVD/VCR to select the "LINE1", "LINE2" or "LINE3" instead of the preset channel.

LINE1 = TV-RGB/Composite Scart Socket

LINE2 = VCR/DECODER Scart Socket

LINE3 = Front AV jacks

3 Press **REC/OTR** and then **PAUSE/STILL** of Recording unit.

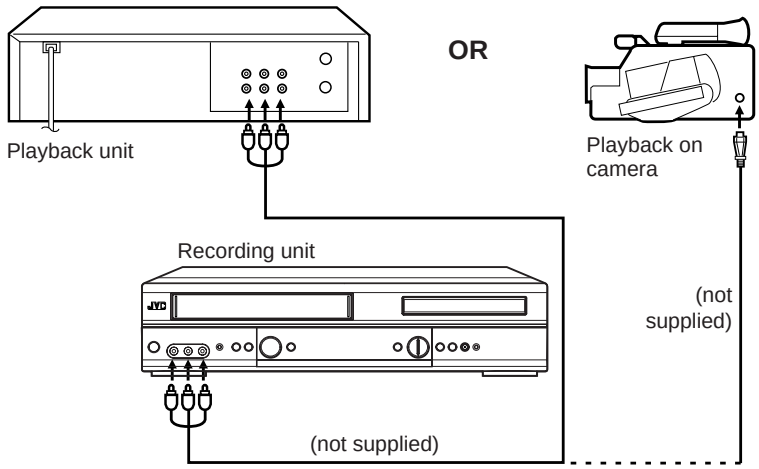
4 Press PLAY-button and then PAUSE/STILL-button of Playback unit. Now you can see the still picture of the scene that you wish to duplicate.

5 Press **PAUSE/STILL** of both units simultaneously to start the Duplicating.

Note:

Before starting the duplicating process, select the proper tape speed using **SP/LP**. For a pre-recorded tape the correct tape speed will be set automatically during playback.

Connection with second Video recorder or Video camera



Press **AUX** on the recording unit repeatedly until L3 appears.

Disc

This unit applies to DVD discs from Region 2 only.
The loaded Disc (DVD, Video-CD, Audio-CD and MP3-CD) will be recognized automatically.
The suitable Disc-formats are: DVD, CD-R and CD-RW.
Some CD-R/RW discs may be incompatible.
This DVD/VCR uses the PAL color system. The NTSC-DVDs can be playback on PAL 60Hz.

Do not play DVD-ROM, DVD-Audio, CDV, CD-G or Photo CD to prevent accidental erasure of prerecorded material.

Some DVDs is played back with a Copy guard system. In case of a dubbing on video tape, strong disturbance may occur. This is not a defect of this DVD/VCR.

Title

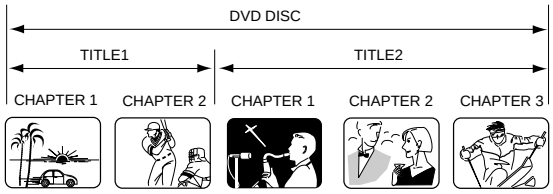
When two or more movies are recorded on a disc, the disc is divided into two or more sections. Each section is called a “TITLE”.

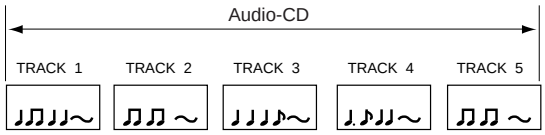
Chapter

The titles can be subdivided into many sections. Each section is called a “CHAPTER”.

Track

An Audio CD can contain several items. These are assigned to the tracks.





Removing Disc from Case

Be sure to hold the edge of disc. Do not touch the surface of the disc. Pick up the disc gently from the case.

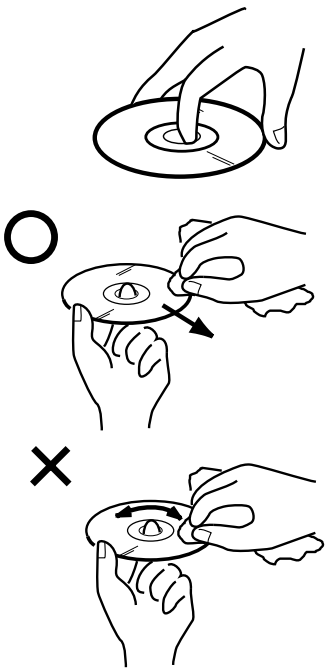
- Do not scratch the disc.
- Do not get dirt on the surface of the disc.
- Do not stick a label or adhesive tape on the disc.
- Do not drop or bend the disc.

Storing Disc

- Store the disc in the case to avoid risk of scratches, dirt or damage.
- Do not leave disc exposed to direct sunlight or in hot or humid places.

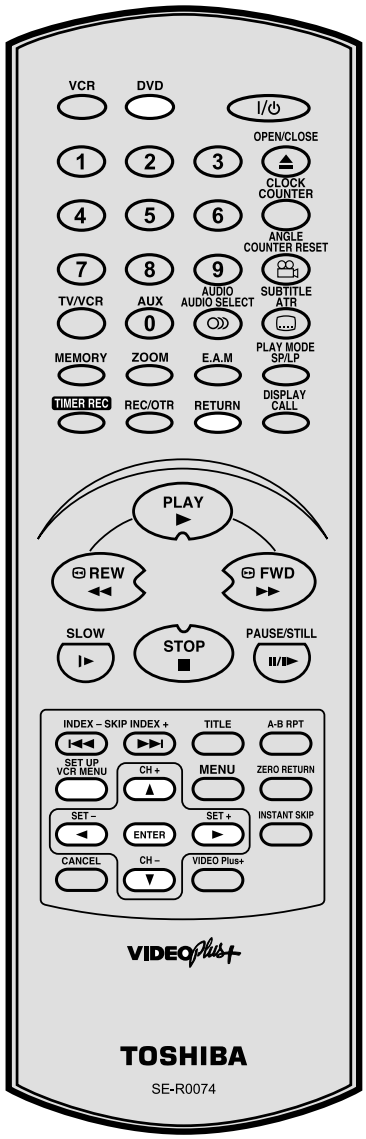
Cleaning Disc

Wipe the disc with a clean, dry cloth from centre to edge.
- Do not wipe the disc round.
- Do not use liquid or aerosol cleaners.



Setting setup language

The setup language can be selected.

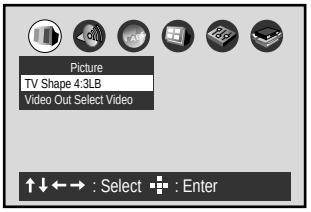


Preparation:

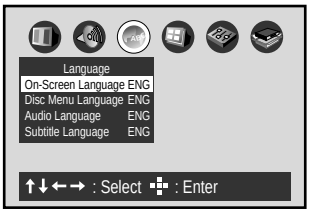
- Turn ON the TV and set to the video input mode.
- When using an amplifier, switch on the amplifier.

1 Press **DVD** to select the DVD mode. (The DVD indicator will light.)
"No Disc" will appear on the screen. (If a DVD disc has already loaded, the playback will start automatically.)

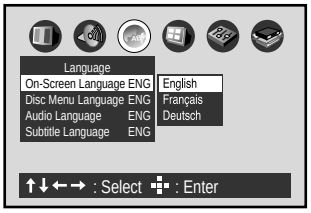
2 Press **SET UP** in the stop mode. The SETUP MENU of DVD will appear on the screen.
Then press ◀ or ▶ to select "Language".



3 Press ▲/▼ to select On-Screen Language, then press **ENTER**.



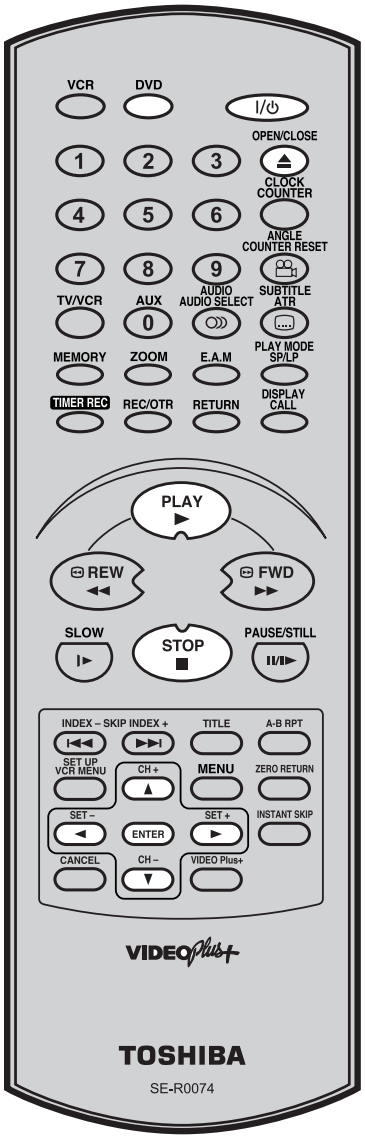
4 Press ▲/▼ to select desired language: English (English), German (Deutsch) or French (Français).



5 To make the SETUP screen disappear, press **SET UP** (or **RETURN**).

If the DVD/VCR does not operate properly: Static electricity, etc., may affect the player's operation. Disconnect the AC power cord once, then connect it again.

Playback procedure

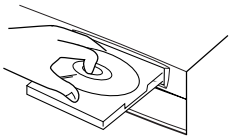


Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

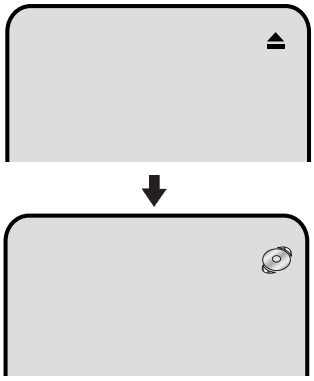
1 Press **OPEN/CLOSE**.
The disc tray will open.

2 Place a disc onto the tray.
Hold the disc, position it with the printed label side up, align it with the guides, and place it in its proper position.



3 Press **PLAY** or **OPEN/CLOSE**.
The disc tray closes automatically. On the screen, ⏏ changes to "💿" and then playback will commence.

- A menu screen may appear on the TV screen, if the disc has a menu feature. In this case, press ▲, ▼, ◀, ▶ or **ENTER** to operate a menu feature.



4 Press **STOP** to end playback.

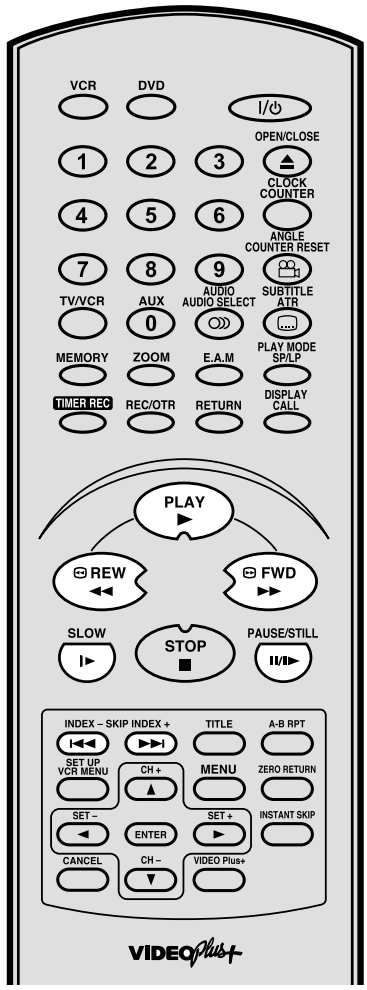
- The DVD/VCR memorizes the stopped point, depending on the disc. "To Return To The Last Scene Viewed, Press Play. To Disable This Operation, Press STOP Again." appears on the screen for approx. 4 seconds. Press **PLAY** to resume playback (from the scene point).
- If you press **STOP** again ("■" appears on the screen) or unload the disc, the DVD/VCR will clear the stopped point.

5 Then press **OPEN/CLOSE**.
The disc tray opens.
Remove the disc and press I/⏻, **(POWER)**.
The disc tray closes automatically and DVD/VCR turns off.

NOTES:

- If a non-compatible disc is loaded, "Please Check Disc", "Disc playback unauthorized Consult owners manual for further information" or "Parental Lock" will appear on the TV screen according to the type of loaded disc. In this case, check your disc again (See pages 36 and 46, 47).
- Some discs may take a minute or so to start playback.
- A "Prohibition" symbol ⃠ may appear at the upper right of the screen. This symbol means either the feature you tried is not available on the disc, or the DVD/VCR can not access the feature at this time. This does not indicate a problem with the DVD/VCR.
- When you set a single-faced disc label downwards (ie. the wrong way up) and press **PLAY** or **OPEN/CLOSE**, "💿" will appear and remain on the screen for approx. 30 seconds and then it will change to "Please Check Disc".
- Some playback operations of DVDs may be intentionally fixed by software producers. Since this DVD/VCR plays DVDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs.
- When playing DTS-encoded Audio CDs, excessive noise will be heard from the analog stereo outputs. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo outputs of the DVD/VCR are connected to an amplification system.

Note: There may be a slight delay between pressing the button and the function activation.



NOTES:

- The unit is capable of holding a still video image or On screen display image on your television screen indefinitely. If you leave the still video image or On screen display image displayed on your TV for an extended period of time, you risk permanent damage to your television screen. Projection televisions are very susceptible.
- Some titles may not display chapter numbers.
- When you set “Title Stop” to “Off” (See page 53), you can access chapter in another title. If you go back to the preceding title by pressing the **SKIP**, the DVD/VCR locates the first chapter of the title. When “Title Stop” is set to “On”. you can access chapters only within the current title.

Fast Forward Playback

Press **FWD** during normal playback.
Each press of **FWD** will increase the speed of the search x2 (▶▶), x8 (▶▶▶), x30 (▶▶▶▶), x100 (▶▶▶▶▶). (in case of Audio-CD: x4 (▶▶) and x8 (▶▶▶) are available)

- To resume normal playback, press **PLAY**.

Review Playback

Press **REW** during normal playback.
Each press of **REW** will increase the speed of the search x2 (◀◀), x8 (◀◀◀), x30 (◀◀◀◀), x100 (◀◀◀◀◀). (in case of Audio-CD: x4 (◀◀) and x8 (◀◀◀) are available)

- To resume normal playback, press **PLAY**.

Still Playback

Press **PAUSE/STILL** during normal playback.

To resume normal playback, press **PLAY**.

Frame Advance

Press **PAUSE/STILL** during still playback.
One frame is advanced each time you press **PAUSE/STILL**.

To resume normal playback, press **PLAY**.

Slow-motion Playback

Press **SLOW** during normal playback or still playback.
Each press of **SLOW** will change the speed of the slow x1/2, x1/4, x1/8.

- To resume normal playback, press **PLAY**.
- To resume the still playback, press **PAUSE/STILL**.

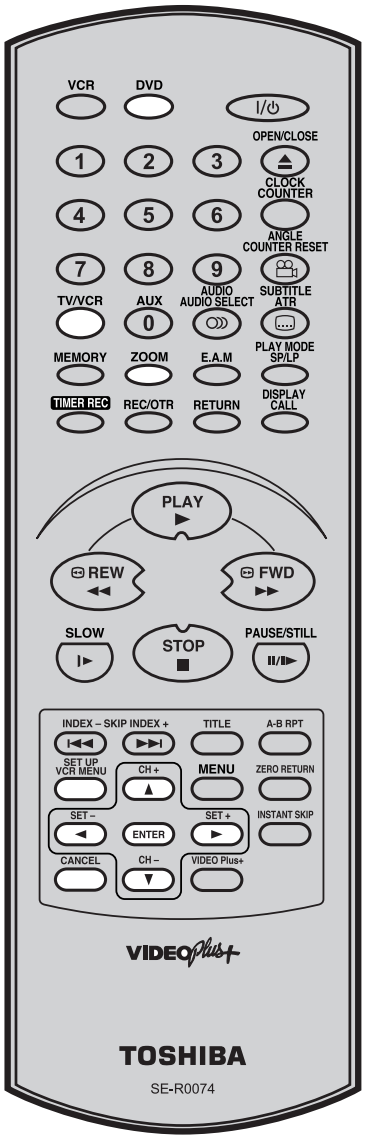
Locating a chapter or track

Press **SKIP (▶▶I)** Forward or **SKIP (I◀◀)** Reverse during playback to locate a chapter or track that you want to watch.
Each time you press the button, a “C (chapter)” number or “T (track)” number is skipped.

When you press **SKIP (I◀◀),** playback starts from the beginning of the current chapter or track.
When you press **SKIP (I◀◀)** twice, playback starts from the beginning of the preceding chapter or track.

DVD Picture Signal Selection/Zooming

You can select the output signal of DVD playback picture to the TV screen as an VIDEO signal or a RGB signal.



Notes:

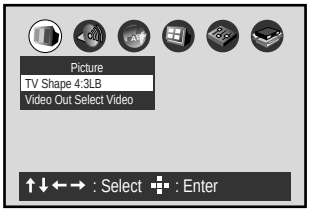
- Picture Signal Selection is only available for connecting with a 21 pin Scart Cable.
- Depending on your TV, NTSC disc may not playback correctly in colour. In this case, it is recommended to select the Picture Signal RGB on step **2**.
- Only use RGB setting if your TV is RGB compatible.

Preparation:

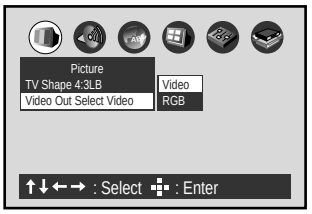
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

1 Press **SET UP** in the stop mode.

Press ◀ or ▶ to select "Picture", then press ▲ or ▼ to select "Video Out Select".



2 Press **ENTER**.
Press ▲ or ▼ to select the desired picture signal, "Video" or "RGB".



3 To make SETUP screen disappear, press **SET UP**.

Notes:

- If you use the connection with S-Video cord, be sure to set the "Video Out Select" at step **2** above to "Video". If you select "RGB", the TV screen will be disturbed.
- If you selected "RGB" at step **2** above, press **TV/VCR** to select VCR. (VCR indicator will appear on the display) Otherwise, the TV screen will be disturbed when you select the channel with TV's CHANNEL UP/DOWN buttons.

Zooming

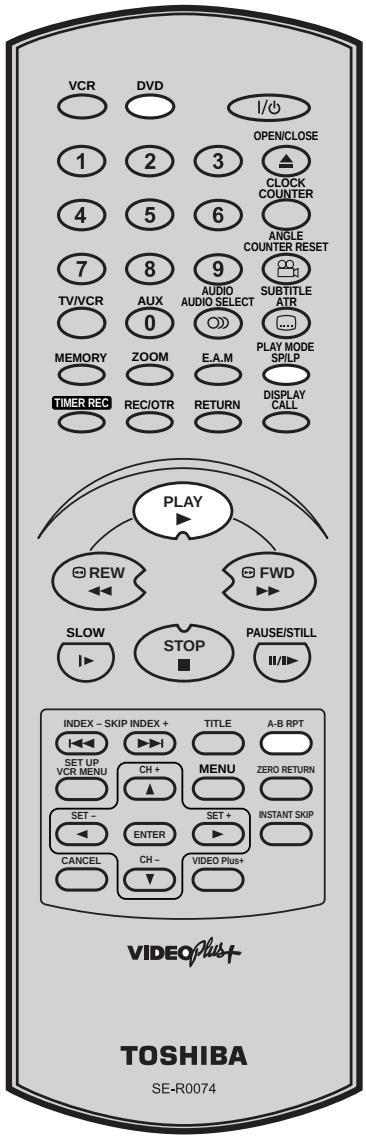
This unit will allow you to zoom in on the frame image. You can then make selections by switching the position of the frame.

1 Press **ZOOM** during playback. The centre part of the image will be zoomed in.
As you repeatedly press the **ENTER** or **ZOOM** while "ZOOM" is selected, the magnification level changes. Variation of the levels includes image reduction.

2 Press ▲/▼ or ◀/▶ to view a different part of the frame. You may move the frame from the centre position to UP, DOWN, LEFT or RIGHT direction.

- If you select "EXIT" and press the **ENTER**, you can turn off the symbol mark, keeping the current magnification level.
- Press **CANCEL** to restore the zoom point to the centre of the picture.

3 While "**ZOOM**" is selected, press **ZOOM** repeatedly to return to a 1:1 view.



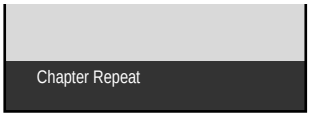
Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

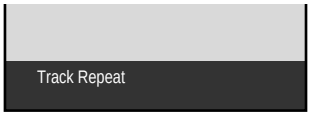
REPEAT PLAYBACK

1 Press **PLAY MODE** repeatedly to select “Chapter Repeat”, “Title Repeat” or “All Repeat”. (In case of CD, select “Track Repeat” or “ All Repeat”)

DVD



CD



2 During playback repeat playback will start automatically.
To start repeat playback during stop mode, press **PLAY** within about 5 seconds after you press **PLAY MODE**.

- To resume normal playback, press **PLAY MODE** repeatedly until “Off” appears on the TV-screen.

A-B Repeat Playback

A-B repeat playback allows you to repeat material between two selected points.

1 Press **A-B RPT** during playback.
The start point is selected.

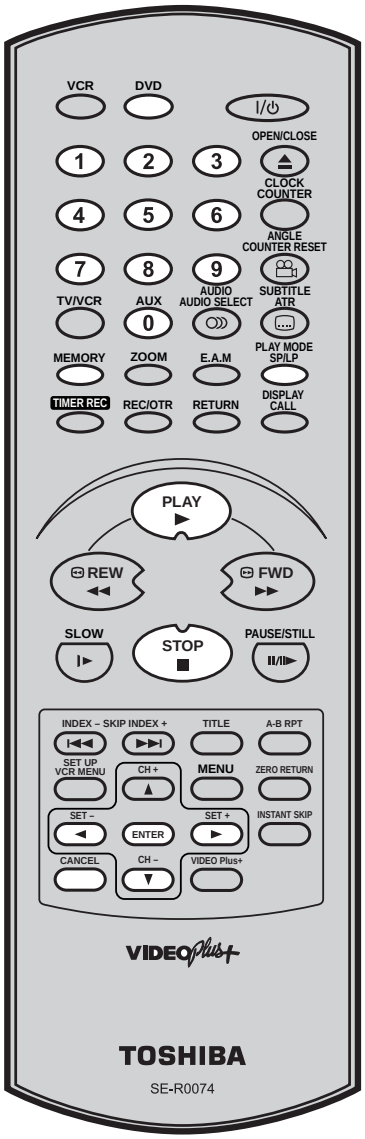
2 Press **A-B RPT** again.
The end point is selected. Playback starts at the point that you selected. Playback stops at the end point, returns to Point A automatically, then starts again.

To resume normal playback, press **A-B RPT** again.
“Repeat Off” appears on the screen.

NOTES:

- Some discs may not work with the repeat operation.
- In A-B repeat mode, subtitles near point A or B may not appear.
- During the A-B Repeat Playback the ANGLE feature will not operate.
- You may not be able to set A-B Repeat, depending on the scenes of the DVD.
- A-B repeat does not work with an interactive DVD and MP3-CD.
- Random playback can not be combined with Repeat playback.

Memory playback/Random playback



Preparation:

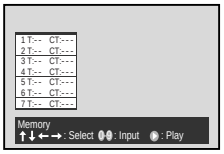
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Memory playback

You can arrange the order of titles, chapter or tracks on the disc.

1 Press **MEMORY**.

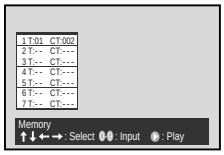
In stop mode



In playback

2 Press ◀ / ▶ to select “T” Title number or “CT” Chapter or Track number. Use **numbe keys** to Input the favorite number.

In stop mode

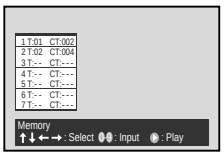


In playback

- If you input a large number than the number that is recorded on the disc, the bar will be skipped.
- The input number into "T" for CD or MP3 is not effective.

3 Press ▼ or **ENTER**. Set the “T” and “CT” in the next bar as In step **2**.

In stop mode



In playback

- When you select another chapter In the same title, you do not need to select the title number.
- To cancel the programmed selection, press **CANCEL**.

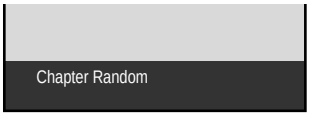
4 Press **PLAY** to start MEMORY playback.

- To resume normal playback, press **CANCEL**.

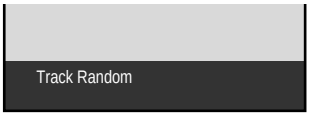
Random playback

1 Press **PLAY MODE** repeatedly to select “ Chapter Random” or “Title Random”.(In case of CD, select Track Random)

DVD



CD



2 During playback random playback will start automatically. To start random playback during stop mode, press **PLAY** within about 5 seconds after you press the **PLAY MODE**.

- To resume normal playback, press **PLAY MODE** repeatedly until “Off” appears on the TV-screen.

NOTES:

- The memory playback is cancelled when press **STOP** during memory playback.
- Random playback can not be combined with Repeat playback.
- You can program up to 30 selections into the memory.
- Depending on the DVD, Chapter Random operation may not work during playback.
- You cannot use the random playback with memory playback.

This player can play back the MP3-data which has been recorded on CD-R or CD-RW. To produce the MP3-data, you need a Windows-PC with CD-ROM drive and a MP3-encoding Software (not supplied).
The Apple-HFS-System can not be played.

MP3 CD Information

Limitations on MP3 CD playback

- MP3 CD is the disc that is standardized by ISO9660, its file name must include 3-digits extension letters, “mp3”.
- The directory and file names of the MP3 CD must correspond to the ISO standardized files.
- This unit can read 200 files per disc. If one directory has more than 200 files, it reads up to 200 files, the remaining files will be omitted.
- As for multi-session disc, only the first session can be played.
- If the CD has both audio tracks and MP3 files, only audio tracks are played.
- It may take more than one minute for this unit to read MP3 files depending on its structure.
- Music recorded by “Joliet Recording Specification” can be played back, the file name is displayed (within 8 letters) on the screen. Long file names will be condensed.
- The music files recorded by “Hierarchical File System” (HFS) cannot be played.

Limitations on display

The maximum number for display is 8 letters. Available letters for display are the following: capital or small alphabets of A through Z, numbers of 0 through 9, and _ (under score).

Notes on MP3 files

To play back MP3 CD in the recorded order,

1. Use MP3 software that records data alphabetically or numerically.
2. Name each file including a two-digit or three-digit number (e.g. “01” “02” or “001” “002”).
3. Refrain from making too many sub-folders.

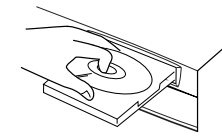
CAUTION:

- Some MP3 CDs can not be played back depending on the recording conditions.
- The CD-R/RW that has no music data or non-MP3 files can not be played back.

Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

1 Press **OPEN/CLOSE**.
The disc tray will open.
Place a disc onto the tray.



2 Press **PLAY** or **OPEN/CLOSE**.
The disc tray closes automatically.
On the TV-screen, “ ” and then reading file number will appear.
Then playback will commence.
- Reading will take as much time as the number of file.
- Press **STOP** to end playback.

3 Press **DISPLAY**.
Then press ◀ / ▶ to select MP3 and press **ENTER**.

4 Press ▲/▼ or ◀ / ▶ to select the desired track, then press **ENTER**. Track is selected and play commences.
- In case the folder includes more than 9 tracks, press ◀ / ▶ to display next track list.
- To remove track list, press **CANCEL**.
- Press ◀ / ▶ to select “T” and press **number keys** to input your desired track.

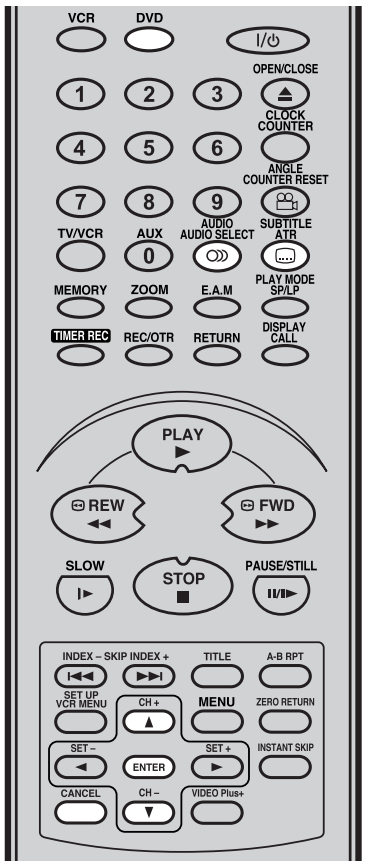
5 Press **STOP** to end playback.
- The unit records the stopped track.
  Press **PLAY** to resume playback (from the beginning of track).
- If you press **STOP** again or unload the disc, the unit will clear the stopped track.

6 Press **OPEN/CLOSE**.
The disc tray opens.
Remove the disc and press I/⏻.
The disc tray closes automatically and DVD/VCR turns off.

NOTES:

- During MP3-Playback, you can not use SEARCH, A-B Repeat functions.
- You can use Repeat(Track or All) and Random functions for MP3 CD Playback.(See page 41 and 42)

Changing soundtrack language / Changing Subtitles language



NOTES:

- If the desired language is not heard after pressing **AUDIO** several times, the language is not recorded on the disc.
- Changing soundtrack or subtitle language is cancelled when you open the disc tray or turn the power off. The initial default language or available language will be heard and seen if the disc is played back again.
- Depending on the DVD you may be unable to turn on, turn off, or change the subtitles, even if they are recorded on the disc. While playing the DVD, the subtitle may change while opening or closing the disc tray, or while changing the title.
- During some scenes, the subtitles may not appear immediately after you select "On".
- The abbreviation of the language appears instead of the language name. Refer to the list of languages and their abbreviations. (See on page 57.)

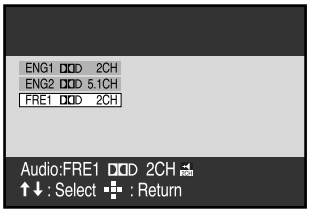
Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Changing soundtrack language

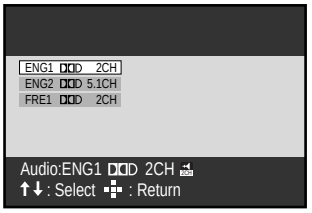
You can select the language when you play a multilingual disc.

1 Press **AUDIO** during playback. The current soundtrack language is displayed.



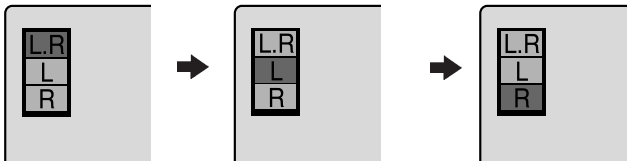
2 Press **AUDIO** repeatedly until the desired language is selected. The on-screen display will disappear after a few seconds.

- To turn off the soundtrack setting display, press the **CANCEL** or **ENTER** button.



In case of VIDEO CD playback

Audio type changes as follows each time you press AUDIO.



Changing Subtitles language

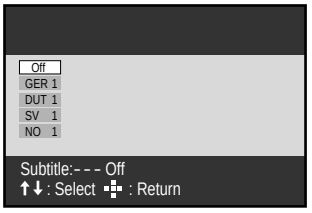
You can select the language when playing back a disc recorded with multi-lingual subtitles.

1 Press **SUBTITLE** during playback.

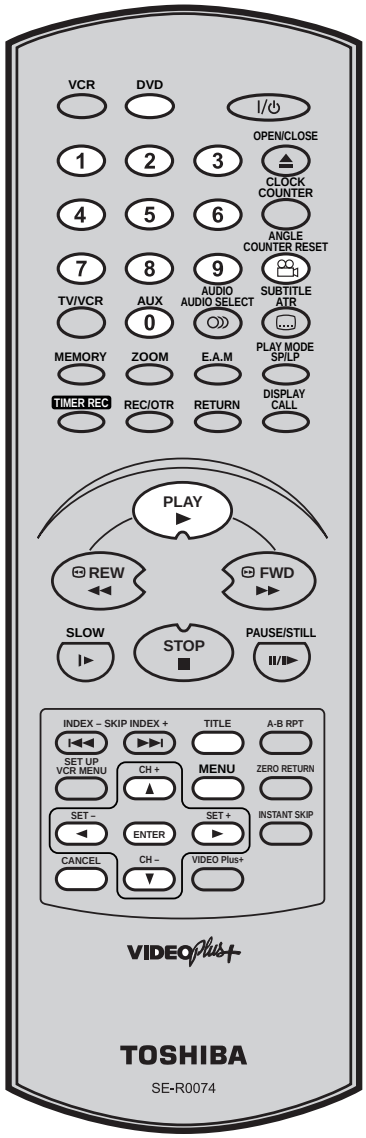
Then press ▲/▼ to select the desired language.

- To turn off the subtitle setting display, press the **CANCEL** or **ENTER** button.
- To turn the subtitles off, select "Off".

2 Press **SUBTITLE** repeatedly to turn Subtitles on or off.



Changing angles / Title selection / DVD menu



NOTE:

Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the disc, or you may be unable to select the title, and a “title menu” may simply be called a “menu” or “title” in the instructions supplied with the disc.

Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Changing Angles

When playing back a disc recorded with multi-angle facility, you can change the angle that you are viewing the scene from.

1 Press **ANGLE** during playback.
The current angle will appear.

2 Press **ANGLE** or ▲/▼repeatedly until the desired angle is selected.

- To turn off the angle number display, press the **CANCEL**.
- You can change the camera angle directly by pressing the **number keys** corresponding to its angle number instead of using the ▲/▼buttons.

Title Selection

Two or more titles are recorded on some discs. If the title menu is recorded on the disc, you can select the desired title.

1 Press **TITLE** during playback.
Title menu appears on the screen.

- Press **TITLE** again to resume playback at the scene when you pressed **TITLE**.

2 Press ▲/▼ or ◀/▶ to select the desired title.

3 Press **ENTER** or **PLAY**.
The playback of the selected title will start.

DVD Menu

Some DVDs allow you to select the disc contents using the menu.

When you play back these DVDs, you can select the subtitle language and sound-track language,etc. using the DVD menu.

1 Press **MENU** during playback.
The DVD menu appears on the screen.

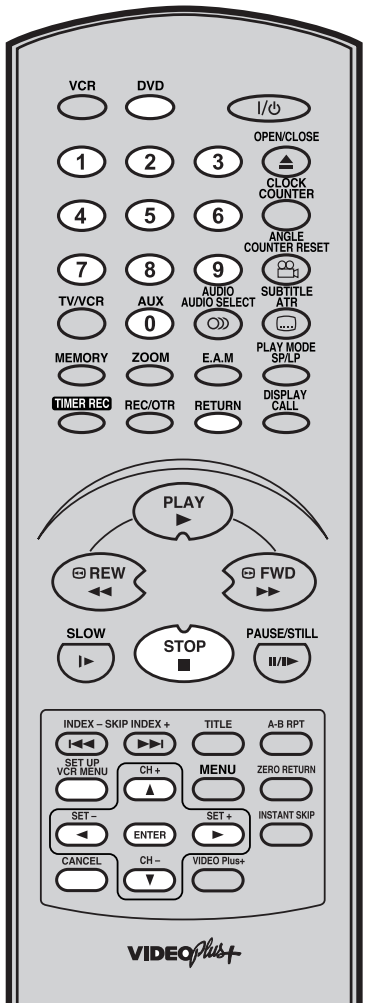
- Press **MENU** again to resume playback at the scene when you pressed **MENU**.

2 Press ▲/▼ or ◀/▶ to select the desired item.

3 Press **ENTER**.
The menu continues to another screen. Repeat steps **2** and **3** to set the item completely.

Parental control

Some discs are specified not suitable for children. Such discs can be prevented from play back with the unit.



NOTES:

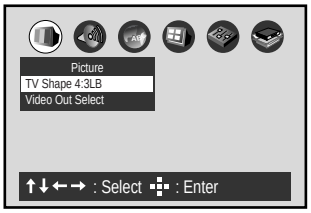
- **If each setup (page 46~55) has been completed, the unit can always be worked under the same conditions (especially with DVD discs). Each setup will be retained in the memory if you turn the power off.**
- Depending on the discs, the unit cannot limit playback.
- Some discs may not be encoded with specific rating level information though its disc jacket says "adult". For those discs, the age restriction will not work.
- Do not forget the security code. If you forget the security code, delete it. (See step **7** on next page)

Preparation:

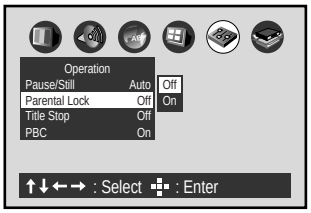
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Parental control setting

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select "Operation".



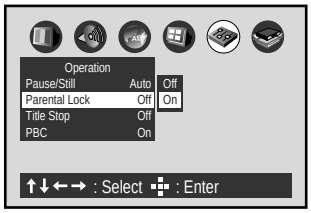
2 Press ▲ or ▼ to select "Parental Lock", then press **ENTER**.



3 Press ▲ or ▼ to select Off or On.

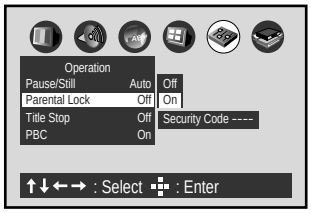
Off: The parental lock feature does not function. After pressing **ENTER**, follow step **4** and **6** below.

On: To activate the parental lock feature or change the setting, press **ENTER** and follow steps **4**-**6** below.



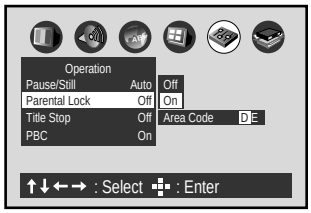
4 Press **number keys** to input a 4-digits security code then press **ENTER**.

- If you input a wrong number, press **CANCEL**.
- To return to the before step, press **RETURN**.



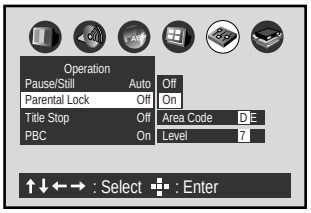
5 Enter the code of a country/area whose standards were used to rate the DVD disc. (See the list on the page 47)

Example: Set to GB (UNITED KINGDOM).
Press ▲ or ▼ to select "G" then press ▶ to move to the right character. Then select "B" same as above. Then press **ENTER**.



Country/Area	Code	Country/Area	Code
AUSTRALIA	AU	NETHERLANDS	NL
BELGIUM	BE	NORWAY	NO
CANADA	CA	PHILIPPINES	PH
CHINA	CN	RUSSIAN FEDERATION	RU
CHINA HONG KONG	HK	SINGAPORE	SG
DENMARK	DK	SPAIN	ES
FINLAND	FI	SWEDEN	SE
FRANCE	FR	SWITZERLAND	CH
GERMANY	DE	TAIWAN	TW
INDONESIA	ID	THAILAND	TH
ITALY	IT	UNITED KINGDOM	GB
JAPAN	JP	UNITED STATES	US
MALAYSIA	MY		

6 Press ▲/▼ to select the parental lock level, then press **ENTER**.



You cannot play DVD discs rated higher than the level you selected unless you cancel the parental lock function.
For example, when you select level 7, discs rated higher than level 7 are locked out and cannot be played.

- **Level 1:** DVD software for adults cannot be played back.
- **Level 8:** All DVD software can be played back.
- Select from the level 1 to level 8. The limitation will be more severe as the level number is lower.

7 To make the SETUP screen disappear, press **SET UP**.

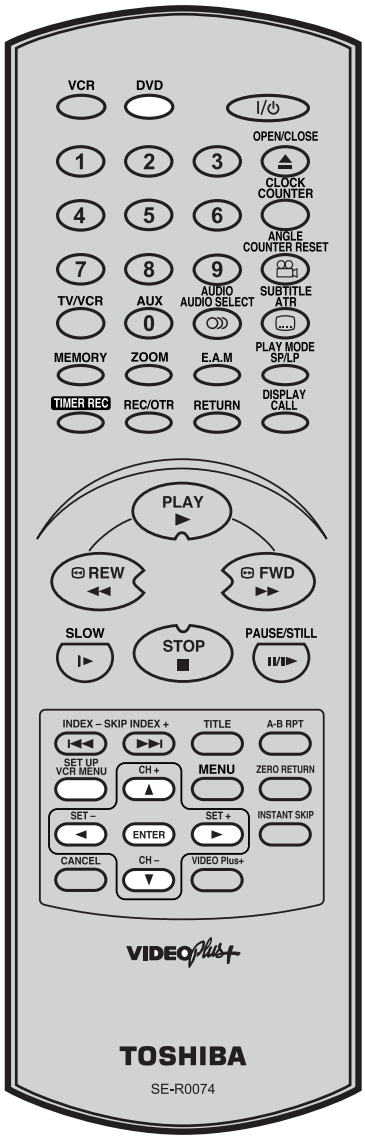
■ **To change the parental lock level**
Follow steps **1**- **6**.

■ **To change your 4-digit security code**

1) After selecting "On" or "Off" at step **3** press **STOP** four times, then press **ENTER**.
   The 4-digit security code is deleted.
2) Press **number keys** to create a new 4-digit security code at step **4**.

Setting menu language

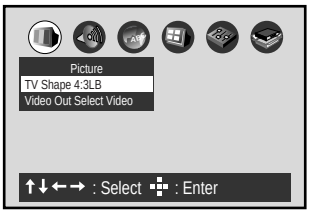
You can select the language of the disc menu messages of DVDs.



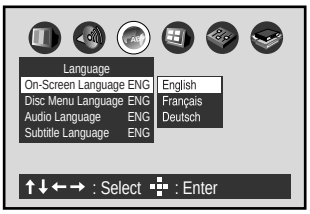
Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

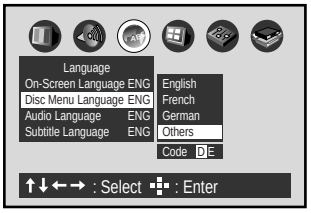
1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select “Language”.



2 Press ▲ or ▼ to select “Disc Menu Language”.



3 Press **ENTER**.
Press ▲ or ▼ to select your desired language, then press **ENTER**.



English, French, German
The selected language is the first-priority Menu language.

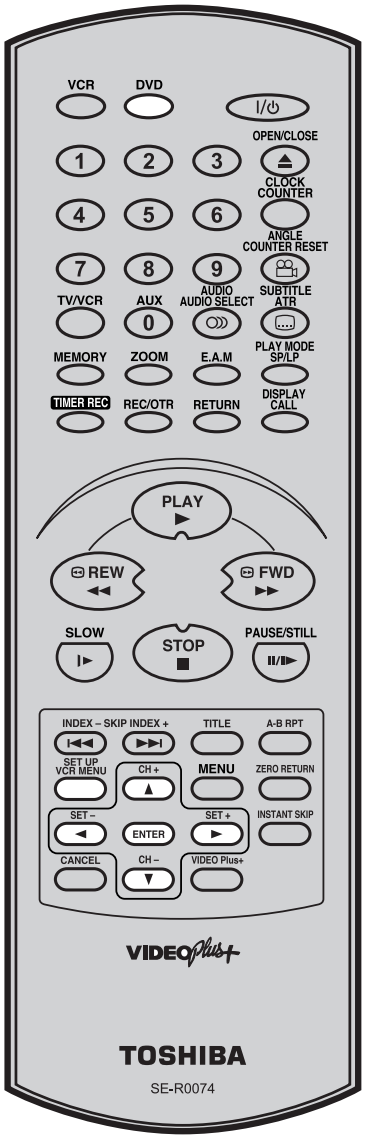
Others: Other languages can be selected (See the Table of languages on page 57).

Example:
Set to EN (ENGLISH).
Press ▲ or ▼ to select “E” then press ▶ to move to the right character. Then select “N” same as above. Then press **ENTER**.

4 To make the SETUP screen disappear, press **SET UP**.

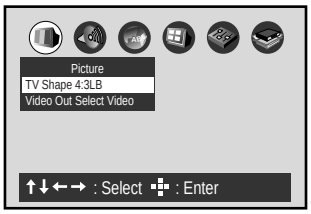
Setting audio soundtrack language

The same audio soundtrack language can always be selected by your unit even if you replace the disc or turn the power off.



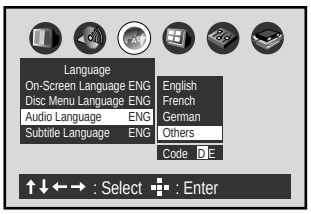
Preparation:
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select "Language".



2 Press ▲ or ▼ to select "Audio Language".

3 Press **ENTER**.
Press ▲ or ▼ to select your desired Audio Language, then press **ENTER**.



English, French, German
The language you have selected will play if it is recorded on the disc.

Others: If you want to select another language, enter the language code (See the Table of languages on page 57).

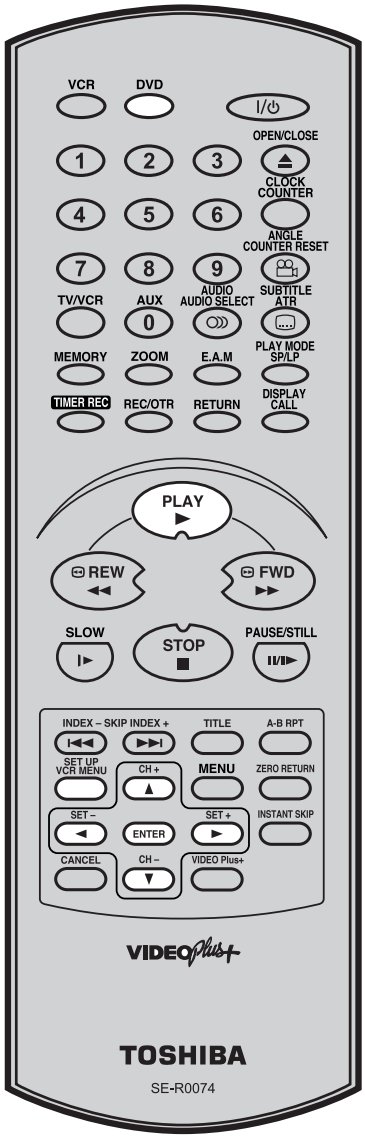
Example:
Set to EN (ENGLISH).
Press ▲ or ▼ to select "E" then press ▶ to move to the right character. Then select "N" same as above. Then press **ENTER**.

4 To make the SETUP screen disappear, press **SET UP**.

NOTES:
- If the selected language is not recorded on the disc, the original language will be heard.
- Some DVD discs may be played in a different language than you selected. A prior language may be programmed on the disc.

Setting subtitle language

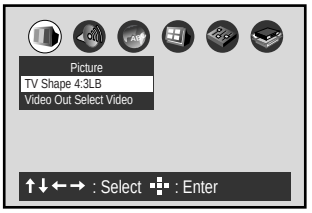
The same subtitle language can always be selected even if you replace the disc or turn the power off.



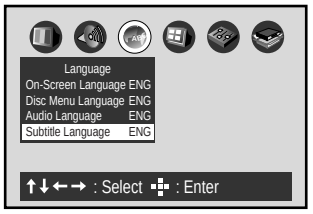
Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

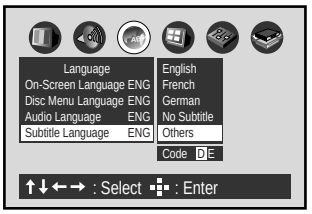
1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select "Language".



2 Press ▲ or ▼ to select "Subtitle Language".



3 Press **ENTER**.
Press ▲ or ▼ to select your desired language, then press **ENTER**.



English, French, German
The subtitle is displayed with the selected language if it is recorded on the disc.

No Subtitle:
Subtitles do not appear.

Others: If you want to select another language, enter the language code (See the Table of languages on page 57).

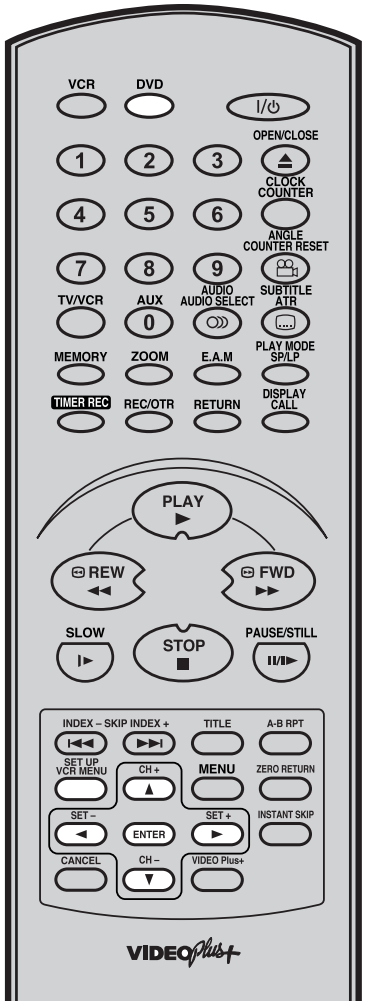
Example: Set to EN (ENGLISH).
Press ▲ or ▼ to select "E" then press **PLAY** to move to the right character. Then select "N" same as above. Then press **ENTER**.

4 To make the SETUP screen disappear, press **SET UP**.

NOTES:

- If the selected language is not recorded on the disc, the first-priority language is selected.
- Some DVD discs may be set to display subtitles in a different language than you selected. A prior subtitle language may be programmed on the disc.

You can select the aspect ratio for your TV.



NOTES:

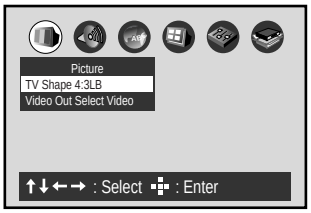
- The displayable picture size is preset on the DVD video disc. Therefore, the playback picture of some DVD video discs may not conform to the picture size you select.
- When you play DVD video discs recorded in the 4:3 picture size only, the playback picture always appears in the 4:3 picture size regardless of the TV shape setting.
- If you select "16:9 widescreen" and you own a 4:3 TV set, the DVD playback picture will be horizontally distorted during playback. Images will appear to be horizontally compressed. Always be sure that your TV shape conforms to the actual TV in use.

Preparation:

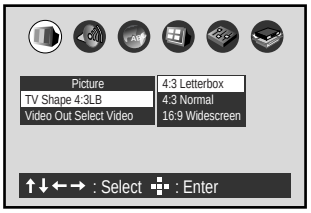
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Setting the aspect ratio of TV screen

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select "Picture", then press ▲ or ▼ to select "TV shape".



2 Press **ENTER**. Press ▲ or ▼ to select your desired screen type.



You have the following screen sizes to choose from:

4:3 Letterbox:
Select when a standard 4:3 TV is connected.
Displays theatrical images with masking bars above and below the picture.

4:3 Normal:
Select when a standard 4:3 TV is connected.
Displays pictures cropped to fill your TV screen. Either or both sides of the picture are cut off.

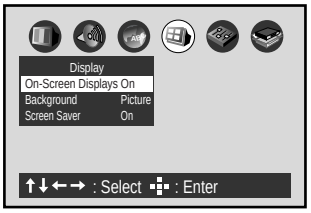
16:9 Widescreen:
Select this mode when connecting to a wide-screen TV.
A wide screen picture is displayed full size.

3 To make the SETUP screen disappear, press **SET UP**.

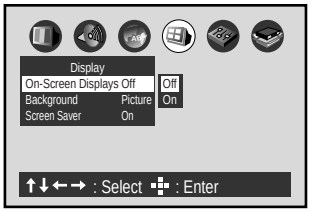
Setting on Screen display

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select "Display"

2 Press ▲ or ▼ to select "On-Screen Displays".



3 Press **ENTER**. Press ▲ or ▼ to select "On" or "Off".

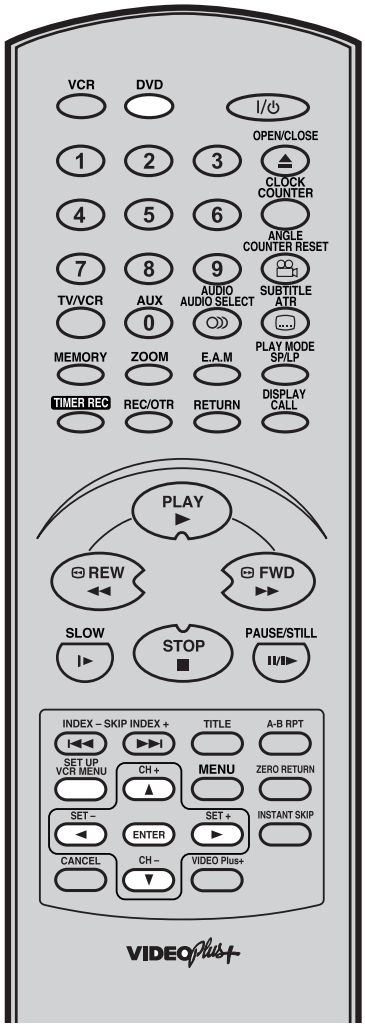


On: Operational modes (e.g. "❚❚", "▶▶") appear when you press the buttons (factory setting).

Off: Operational modes (e.g. "❚❚", "▶▶") do not appear when you press any buttons.

4 To make the SETUP screen disappear, press **SET UP**.

Setting Audio



NOTES:

- The Dynamic Range Control function works only during playback of Dolby Digital recorded discs.
- The level of Dynamic Range Control may differ depending on the DVD video disc.
- The vocal output feature is used during playback of Dolby Digital (multi-channel) recorded DVD KARAOKE discs. This feature allows you to turn off vocal audio tracks, or restore them for background accompaniment.
- When playing KARAOKE, connect the appropriate audio equipment such as an amplifier to the DVD player.

Preparation:

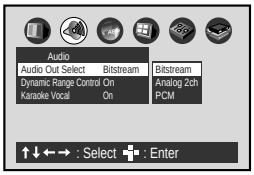
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Audio Out Select

Select the output sound format corresponding to your system connection. For details of sound recording systems, see on page 55.

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select “Audio”.

2 Press ▲ or ▼ to select “Audio Out Select”, then press **ENTER**. Press ▲ or ▼ to select your desired output sound.



Bitstream: Select when connected to an amplifier equipped with a Dolby Digital, DTS, MPEG1 or MPEG2 decoder. The DVD/VCR outputs digital audio information in the bitstream format when you play a DVD video disc recorded on the Dolby Digital, DTS, MPEG1 or MPEG2 recording system.

Analog 2ch: Select when connected to a TV, Dolby Pro Logic or stereo system via the analog audio jacks.

PCM: Select when connected to a 2 channel digital stereo amplifier. The DVD/VCR outputs sounds in the PCM 2ch format when you play a DVD video disc recorded on the Dolby Digital. MPEG1 or MPEG2 recording system.

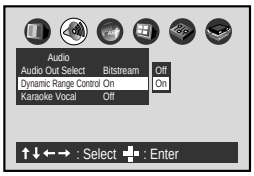
3 To make the SETUP screen disappear, press **SET UP**.

Dynamic Range Control

Turn on or off a function that makes faint sounds easier to hear even if you lower the volume during late hours playback.

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select “Audio”.

2 Press ▲ or ▼ to select “Dynamic Range Control”, then press **ENTER**. Press ▲ or ▼ to select “On” or “Off”.



Off: Full dynamic range is maintained.
On: Dynamic range is reduced.

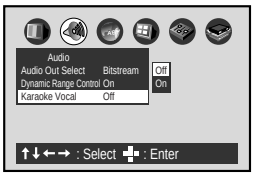
3 To make the SETUP screen disappear, press **SET UP**.

Karaoke Vocal

Turn on or off the vocal output during DVD KARAOKE disc playback.

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select “Audio”.

2 Press ▲ or ▼ to select “Karaoke Vocal”, then press **ENTER**. Press ▲ or ▼ to select “On” or “Off”.



Off: The primary vocal is not output.
On: The primary vocal is output when it is recorded on the disc.

3 To make the SETUP screen disappear, press **SET UP**.

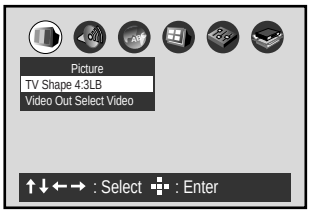
Preparation:

- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

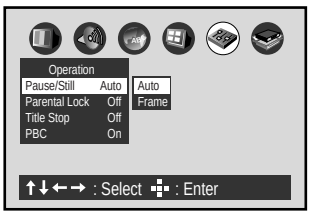
Pause/Still

Select the resolution of still pictures.

1 Press **SET UP** in the stop mode.
Press ◀ or ▶ to select “Operation”.



2 Press ▲ or ▼ to select “Pause/Still”, then press **ENTER**.
Press ▲ or ▼ to select “Auto” or “Frame”, then press **ENTER**.



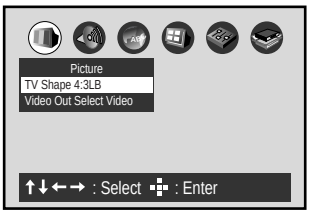
Auto: For normal use. Still and fast motion images can be paused.
Frame: The resolution of still pictures is improved, so that you can make a motionless picture clearer when you pause it.

3 To make the SETUP screen disappear, press **SET UP**.

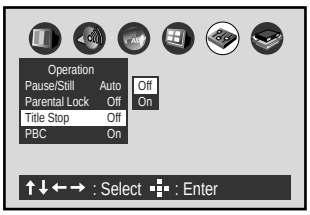
Title Stop

Turn on or off a feature that automatically stops playback after a title has been viewed.

1 Press **SET UP** in the stop mode.
Press ◀ or ▶ to select “Operation”.



2 Press ▲ or ▼ to select “Title Stop”, then press **ENTER**.
Press ▲ or ▼ to select “On” or “Off”, then press **ENTER**.

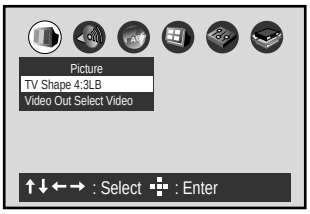


Off: The DVD/VCR continues after playback of a title is completed.
On: The DVD/VCR stops after playback of a title is completed.

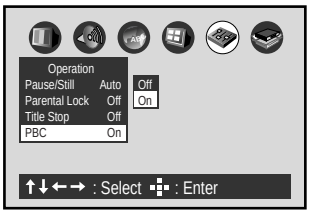
3 To make the SETUP screen disappear, press **SET UP**.

PBC

1 Press **SET UP** in the stop mode.
Press ◀ or ▶ to select “Operation”.



2 Press ▲ or ▼ to select “PBC”, then press **ENTER**.
Press ▲ or ▼ to select “On” or “Off”, then press **ENTER**.



Off: When playing a VIDEO CD without using the menu.
On: To use the menu when playing a PBC-featured VIDEO CD.

3 To make the SET UP screen disappear, press **SET UP**.

Selecting the sound enhancement (E.A.M.)/Setting Background/ Setting Screen Saver

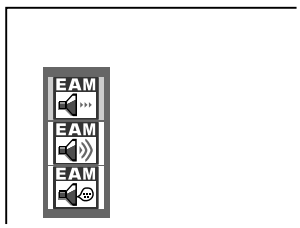
Preparation:
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Selecting the sound enhancement (E.A.M.*)

You can easily switch a preferred audio enhancement.

*E.A.M.: Enhanced Audio Mode

1 Press **E.A.M**.



2 Select the sound enhancement by pressing ▲/▼. Each time you press the button, the sound enhancement changes.

Normal:
Normal sound.

3D:
To obtain expansive virtual surround sound effects from just two speakers.

Dialogue:
To control critical centre channel information to make dialogue more intelligible (only when playing a DVD video disc recorded on the Dolby Digital recording system).
- To use this enhancement on sounds output from the BITSTREAM/PCM jack, be sure to set "Audio Out Select" to "PCM." (see page 55).

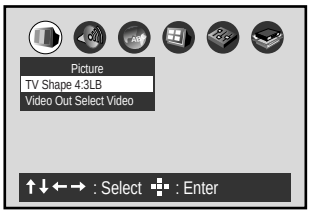
■ **To exit the audio enhancement selection** Press **CANCEL**.

Notes:
- Actual effects to sounds may vary depending on the speaker system. Make selection according to your preference.
- Actual effects to sounds may vary depending on the disc.
- When the DVD/VCR is connected to an amplifier equipped with Dolby Pro Logic Surround, select "Normal". Otherwise, Dolby Pro Logic Surround may function differently than usual.
- Selecting "Dialogue" disables "Dynamic Range Control" function (see page 52).
- During MP3 playback, the sound enhancement is not effective.

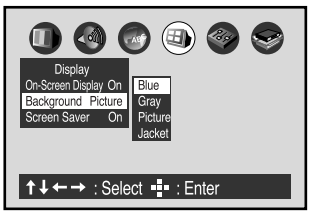
Setting Background

Select the background color or background picture.

1 Press **SET UP** in the stop mode.
Press ◀ or ▶ to select "Display".



2 Press ▲ or ▼ to select "Background", then press **ENTER**. Press ▲ or ▼ to select your desired background, then press **ENTER**.



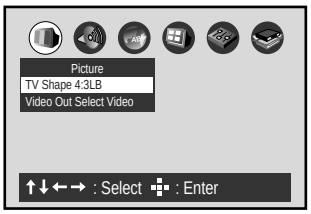
Blue: Blue background.
Gray: Gray background.
Picture: Use the picture which appears when you turn on the DVD/VCR as a background.
Jacket: Use the jacket picture included on some discs as a background. If it is not included, a gray background will be substituted.

3 To make the SETUP screen disappear, press **SET UP**.

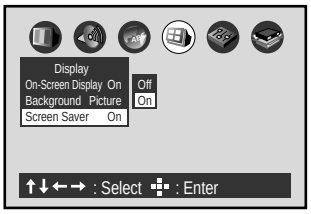
Setting Screen Saver (DVD only)

To turn the screen saver on or off.

1 Press **SET UP** in the stop mode.
Press ◀ or ▶ to select "Display".



2 Press ▲ or ▼ to select "Screen Saver", then press **ENTER**.
Press ▲ or ▼ to select "On" or "Off", then press **ENTER**.

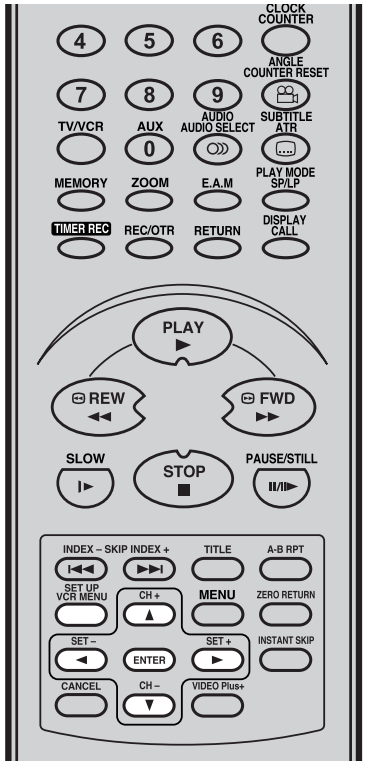


Off: The screen saver is disengaged.
On: The screen saver operates in 10 minutes after you press **PAUSE/ STILL**.

3 To make the SETUP screen disappear, press **SET UP**.

Setting initial setup/output sound conversion table

You can install the initial system setting.

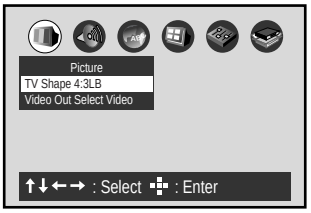


Preparation:

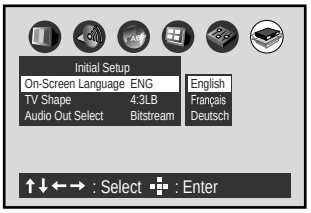
- Turn ON the TV and set to the video input mode.
- Press **DVD** to select the DVD mode. (The DVD indicator will light)

Setting initial setup

1 Press **SET UP** in the stop mode. Press ◀ or ▶ to select “Initial Setup”.



2 Press **ENTER**, then press ▲ or ▼ to select “On-Screen Language”, “TV Shape” or “Audio Out Select”.



On-Screen Language: See on page 37.
TV Shape: See on page 51.
Audio Out Select: See on page 52.

3 To make the SETUP screen disappear, press **SET UP**.

Output sound conversion table (sampling frequency/quantization bit)

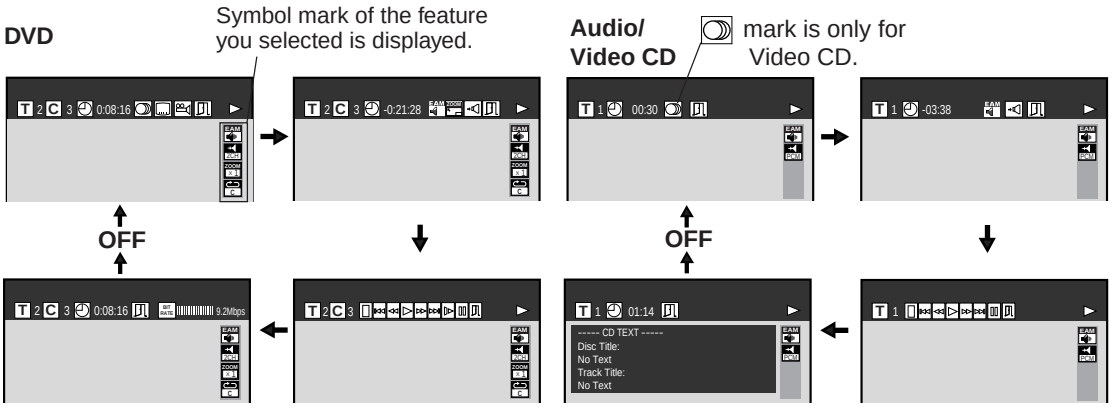
You can select the output sound format corresponding to your system connection (see page 52).

Discs	Recording system		Bitstream		Analog 2ch		PCM	
			DIGITAL AUDIO OUT jack	ANALOG AUDIO OUT jack	DIGITAL AUDIO OUT jack	ANALOG AUDIO OUT jack	DIGITAL AUDIO OUT jack	ANALOG AUDIO OUT jack
DVD video discs	Dolby Digital		Bitstream	48 kHz/20 bit	Bitstream	48 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit
	Linear PCM	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit
		48 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit
		48 kHz/24 bit	48 kHz/16 bit	48 kHz/24 bit	48 kHz/16 bit	48 kHz/24 bit	48 kHz/16 bit	48 kHz/24 bit
		96 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit	—	96 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit
		96 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit	—	96 kHz/20 bit	48 kHz/16 bit	48 kHz/20 bit
		96 kHz/24 bit	48 kHz/16 bit	48 kHz/24 bit	—	96 kHz/24 bit	48 kHz/16 bit	48 kHz/24 bit
	DTS		Bitstream	—	Bitstream	—	—	—
	MPEG1, MPEG2		Bitstream	48 kHz/16 bit	Bitstream	48 kHz/16 bit	48 kHz/16 bit	48 kHz/16 bit
CDs	Linear PCM 44.1 kHz/16 bit		44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit	44.1 kHz/16 bit
	DTS		Bitstream	(Noise)	Bitstream	(Noise)	Bitstream	(Noise)

Status display of Disc

You can view information on the operation status and access and settings.

1 With each press of **DISPLAY**, the status of the disc will appear on the screen and change as follows.



(Audio CD only)

2 Press ◀ or ▶ to select the desired symbol mark, then press **ENTER**.

T : Title number (Track number)
Press ▲/▼ or **number keys** to locate a title or track, then press **ENTER**.

: Elapsed (remaining) time of the current title
Press **number keys** to locate a desired Location, then press **ENTER**.

: Subtitle setting
See page 44.

: To zoom a picture
See page 40.

: To stop playback
See page 38.

: Fast reverse playback
See Page 39.

: Fast forward playback
See page 39.

: To begin slow motion playback
See page 39.

: To turn off the display

CD TEXT
Displays CD text data if included on the audio CDs. (Some letters may not be displayed properly depending on the disc.)

C : Chapter number
Press ▲/▼ or **number keys** to locate a Chapter, then press **ENTER**.

Audio setting
See page 44.

: Angle setting
See page 45.

: E.A.M. (Enhanced Audio Mode)
See page 54.

: Audio Out Select setting
BST: Bitstream 2CH:Analog 2ch PCM:PCM
See page 52.

: Playback starts from the beginning of the current chapter or track.
See page 39.

: To start playback
See page 38.

: To locate succeeding chapters or tracks.
See page 39.

: To pause playback
See page 39.

Data transfer rate (Mbit/s)
Amount of picture, sound and subtitle data in the DVD video disc transferred per second.
The larger the value is, the more data processed, but this does not necessarily insure better picture quality.

Table of languages

Enter the appropriate code for the initial settings"Menu", "Audio" and/or "Subtitle" (see pages 48~50).

Abbreviation	Language
– – –	No alternate language
CHI (ZH)	Chinese
DUT (NL)	Dutch
ENG (EN)	English
FRE (FR)	French
GER (DE)	German
ITA (IT)	Italian
JPN (JA)	Japanese
KOR (KO)	Korean
MAY (MS)	Malay
SPA (ES)	Spanish
AA	Afar
AB	Abkhazian
AF	Afrikaans
AM	Amharic
AR	Arabic
AS	Assamese
AY	Aymara
AZ	Azerbaijani
BA	Bashkir
BE	Belorussian
BG	Bulgarian
BH	Bihari
BI	Bislama
BN	Bengali, Bangla
BO	Tibetan
BR	Breton
CA	Catalan
CO	Corsican
CS	Czech
CY	Welsh
DA	Danish
DZ	Bhutani
EL	Greek
EO	Esperanto
ET	Estonian
EU	Basque
FA	Persian
FI	Finnish
FJ	Fiji
FO	Faroese
FY	Frisian
GA	Irish
GD	Scottish Gaelic
GL	Galician

Abbreviation	Language
GN	Guarani
GU	Gujarati
HA	Hausa
HI	Hindi
HR	Croatian
HU	Hungarian
HY	Armenian
IA	Interlingua
IE	Interlingue
IK	Inupiak
IN	Indonesian
IS	Icelandic
IW	Hebrew
JI	Yiddish
JW	Javanese
KA	Georgian
KK	Kazakh
KL	Greenlandic
KM	Cambodian
KN	Kannada
KS	Kashmiri
KU	Kurdish
KY	Kirghiz
LA	Latin
LN	Lingala
LO	Laotian
LT	Lithuanian
LV	Latvian, Lettish
MG	Malagasy
MI	Maori
MK	Macedonian
ML	Malayalam
MN	Mongolian
MO	Moldavian
MR	Marathi
MT	Maltese
MY	Burmese
NA	Nauru
NE	Nepali
NO	Norwegian
OC	Occitan
OM	(Afan) Oromo
OR	Oriya
PA	Panjabi
PL	Polish
PS	Pashto, Pushto

Abbreviation	Language
PT	Portuguese
QU	Quechua
RM	Rhaeto-Romance
RN	Kirundi
RO	Rumanian
RU	Russian
RW	Kinyarwanda
SA	Sanskrit
SD	Sindhi
SG	Sango
SH	Serbo-Croatian
SI	Singhalese
SK	Slovak
SL	Slovenian
SM	Samoan
SN	Shona
SO	Somali
SQ	Albanian
SR	Serbian
SS	Siswati
ST	Sesotho
SU	Sundanese
SV	Swedish
SW	Swahili
TA	Tamil
TE	Telugu
TG	Tajik
TH	Thai
TI	Tigrinya
TK	Turkmen
TL	Tagalog
TN	Setswana
TO	Tongan
TR	Turkish
TS	Tsonga
TT	Tatar
TW	Twi
UK	Ukrainian
UR	Urdu
UZ	Uzbek
VI	Vietnamese
VO	Volapük
WO	Wolof
XH	Xhosa
YO	Yoruba
ZU	Zulu

Problems and troubleshooting

Use the following check list for troubleshooting when you have problems with your unit. Consult your local dealer or service outlet if problems persist.
Be sure all connections are properly made when using with other units.

SYMPTOMS	POSSIBLE SOLUTIONS	PAGE
DVD/VCR		
DVD/VCR does not operate.	• Make sure the power cord is plugged in. • Try another AC outlet. • Power is off, check fuse or circuit breaker. • Unplug unit, then plug it back in. • Select the DVD or VCR mode before operating.	– – – – 14,37
No picture.	• Antenna connection is not correct or antenna cable is disconnected. • The video channel is not in the correct position or the TV is not set to the video channel. • Check the unit is connected correctly. • The video input selector of the TV is not set to VIDEO. Set to VIDEO (or equivalent). • Channel is set to the external mode.	10 13 10~12 – –
No sound.	• Check the unit is connected correctly. • Check the input selector of the amplifier is set properly. • The unit is in the Special playback mode.	10~12 – 20,39
The remote control does not function.	• Aim the remote control at the remote sensor. • Operate within Approx. 5 Meters or reduce the light in the room. • Clear the path of the beam. • The batteries are weak. Replace the batteries. • Check the batteries are inserted correctly.	9
VCR		
TV recording does not work.	• The erase prevention tab of the video cassette is broken off. • The unit is in the external input mode.	18
Timer recording does not work.	• The time is not set correctly. • The recording start/end time is not set correctly. • The TIMER REC has not been pressed (⏺ is not lit).	15 29 30
Noise bars on screen.	• Tracking adjustment beyond range of automatic tracking circuit. Try Manual tracking adjustment. • Video heads are dirty. • The tape is worn or damaged.	20 59 –
DVD		
Display is not shown in your language.	• Select proper language in the menu options.	37
Playback doesn't start.	• No disc is inserted. • The disc may be dirty. Clean up the disc. • The unit cannot play DVD-ROMs, etc.	38 36 36
Stopping playback, slow-motion play, repeat play, or memory play, etc. cannot be performed.	• Some discs may not do some of the functions.	–

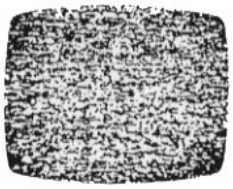
SYMPTOMS	POSSIBLE SOLUTIONS	PAGE
No 4:3 (16:9) picture	• The setup does not match your TV.	51
No on-screen display	• Select Display On.	51
No surround sound	• The setup does not match your stereo system.	12
The unit or remote operation key is not functioning.	• Turn off the unit and unplug the AC power cord for several minutes, then replug it.	14
Playback does not start when the title is selected.	• Check the Parental control setting.	46
Audio soundtrack and/or subtitle language is not changed when you play back a DVD.	• Multilingual language is not recorded on the DVD disc.	49,50
No subtitle	• Some discs have no subtitles. • Subtitles are cleared. Press SUB TITLE.	50 44
Angle cannot be changed.	• Multi-angles are not recorded on the DVD disc.	45
⃠ appears on the screen.	• The function is prohibited with the unit or the disc.	–

Video head cleaning

Video head clogging

The video heads are the means by which the DVD/VCR reads the picture from the tape during playback. In the unlikely event that the heads become dirty enough to be clogged, no picture will be played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the DVD/VCR checked by qualified service personnel.

Good Picture



Snowy Picture

NOTES:
- DO NOT ATTEMPT TO CLEAN THE VIDEO HEADS OR SERVICE THE UNIT BY REMOVING THE REAR COVER.
- Video heads may eventually wear out and should be replaced when they fail to produce clear pictures.
- To help prevent video head clogging, use only good quality VHS tapes. Discard worn out tapes.

Specifications

GENERAL

Power supply:	AC 230-240V 50Hz
Power consumption:	Operation: 22W
	Stand by: 7W
Weight:	4.5 kg
Dimensions:	Width : 430 mm
	Height: 99 mm
	Depth : 314.5 mm
Input Level:	SCART-socket: VIDEO: 1 Vp-p, 75 Ω
	AUDIO: 500 mV, 50 k Ω
	Audio IN jack: 500 mV, 50 k Ω
Output Level:	SCART-socket: VIDEO: 1 Vp-p, 75 Ω
	AUDIO: 500 mV, 1 k Ω
	Audio OUT jack: 500 mV, 1 k Ω
Hi-Fi Frequency Response:	20Hz to 20,000Hz
Hi-Fi Dynamic Range:	More than 75dB

VCR section

Video Head:	4 Rotary Heads
Audio Track:	Hi-Fi Sound - 2 Tracks / MONO Sound - 1 Track
Channel covevage:	2-12, X, Y, Z, S1-S41, 21-69
RF Channel Output:	UHF channel 36 (23 to 69)
F.FWD/REW Time at 25˚C:	Approx. 1minute and 48 seconds (with E-180 Cassette Tape)

DVD section

Signal system:	PAL
Applicable disc:	DVD (12cm, 8cm), CD (12cm, 8cm)
Audio characteristics:	DVD: 4Hz - 22KHz
Frequency response:	CD: 4Hz - 20KHz
S/N Ratio:	90dB
Harmonic distortion:	0.1%
Wow and flutter:	Below Measurable Level
Dynamic range:	90dB
Output:	Audio : (RCA) 500 mV, 1Kohm
	Digital Audio : 0.5Vp-p/75 ohm
Pickup:	CD : Wavelength: 775 - 805 nm
	Maximum output power: 0.5 mW
	DVD : Wavelength: 640 - 660 nm
	Maximum output power: 1.0 mW

ACCESSORIES: Remote control x 1
75 ohm Coaxial Cable x 1
Battery AAA x 2

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